

Guest Editorial

I Am Proud To Be In The Military

Major-General Alain Forand, CMM, SC, MSC, CD

National Planning Group Y2K

The editor gave me carte blanche to write on any topic I wanted. I decided, therefore, to take this opportunity to express the great pride and honour I have always felt as a member of the Canadian Forces, working with men and women who, in spite of the difficulties and obstacles they meet, in spite of budget restrictions, red tape and more and more increasingly dangerous assignments, for which they too often do not receive due recognition, have always responded to their challenges brilliantly and professionally.

I may be biased; in fact, I am definitely biased. But I am convinced that no other profession is more noble, more challenging or demands more self-denial than the military profession. Those men and women who are always ready to answer the call to defend their nation's citizenry, ideals and interests are a significant asset to their country. History proves this assertion to be true and there is absolutely no doubt that it will remain so in the future.

The members of the military with whom I have had the honour of serving, those who, like me, chose to serve their country, have been my inspiration throughout my career. All of these members have left their mark on me in a number of ways and I have always appreciated their support, their advice, their patience and their loyalty. Over the years, I have never ceased to be impressed by their commitment, their professionalism and their dedication.

I also believed, all these years, that the mission the military is called upon to perform is so vital, that success is always the only option. Be it defending Canada from an external menace, or getting the job done in the midst of a crisis or catastrophe, the military has been and continues to be the resource of last and ultimate resort. Not achieving the aim is synonymous with disaster for there is no one available beyond us to pick up the slack. That sense of the importance of the military's call to duty of being there when the situation is critical and when there is no one left to call is as strong now as it was back when I joined, if not stronger.

Since 1990, we have dispatched our soldiers on national and international missions that are more dangerous and at a rate that is more relentless than in any other period in history, excluding the two world wars and the Korean War.

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Our soldiers have successfully completed all of these missions. You only have to ask the people from the South Shore, the Saguenay, Southern Manitoba, Northern and Central Bosnia, Southern Croatia, Cambodia, Haiti or, more recently, from the Central African Republic; they will bear witness to this. Canadian soldiers have proved that they are a match for any soldiers in the world when it comes to professionalism, skills, dedication, determination, effectiveness, pride and courage. Because of our unassuming natures and, sometimes, I must confess, our ineptness, we have problems informing people of all the good work we do. The reality is that Canadian soldiers, both Regulars and Reservists alike, have performed with distinction in more military operations since 1990 than any other soldiers! I am totally convinced that Canadian soldiers are the best in the world and I would not want to go into battle with any other soldiers at my side.

I am very proud when I see our young soldiers, non-commissioned officers and officers alike, proudly sporting four or five medals commemorating the role they played in as many missions, but I cannot stop thinking about the huge sacrifices they and their loved ones have made. Members of the military are exhausted and no wonder! However, in spite of this fatigue, we have always managed to find the energy needed to carry out the next mission by telling ourselves that making that extra sacrifice was part and parcel of our profession

I feel sure that there is no need for me to recite the litany of incidents currently bedevilling the Canadian Forces and the Army. It appears that it will be some time before they stop making the headlines.

It is evident that one of our biggest challenges is that of dealing with the current social environment. The Army has had to keep pace with the pressures brought on by the Charter of Rights and Freedoms, access to information, gender equality, ethnic integration, linguistic parity and a raft of similar modern social yardsticks. We are an important part of Canadian society, and we represent what is right and good about our country at home and abroad.



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From the Managing Editor

Captain John Grodzinski, CD

The Ministry of Defence of the Russian Federation recently celebrated the 80th anniversary of "Military Thought: A Russian Journal of Military Theory and Strategy", established in June 1918. Even before *Perestroika* and *Glasnost*, this publication allowed military officers and scientists to present their thoughts on organizational development and technological change and discuss fundamentally new theoretical propositions on warfare. Although "Military Thought" also promoted the role of the Communist Party of the Soviet Union and Marxist-Leninist teachings in the Soviet Armed forces, it gave the military of a closed society a tool to formulate, debate and develop doctrine. It only became available in the West in 1991. Despite our more democratic and open society, the Canadian has lacked a professional journal for more than a few years. There have been sporadic instances where excellent publications have appeared, but doctrinal and professional advancement has been stymied by apathy, resulting in the demise of these publications. The initial response to The Army Doctrine and Training Bulletin has been positive. Many papers and written comments have been received and hopefully this will continue, allowing the Bulletin to thrive.

Every comment received on this publication has been positive and supportive. I was particularly happy to hear about editorial errors "you forgot this", or "this was spelt incorrectly". These responses proved that the Bulletin was being read. Comments on editorial errors are appreciated, but we must move ahead. This is the essence of academic thought and debate which is desperately needed in the army, and is something, which quite frankly, too few of us have experienced or been exposed to. This should be a professional attribute.

Bulletin Format

With the experience gained in the production of the first issue of the Bulletin, certain changes have been

introduced. The first discovery was that Windows based software used in the army is not fully compatible with the Apple based equivalent in the publishing world. New software will allow the elimination of certain problems (such as footnotes being out of sequence), while the clarity of tables, charts and photographs will improve, and text can be "wrapped" around the graphics. The title and issue number will also appear at the top of each page, increasing our consistency with other professional publications. Other changes will likely continue to appear over the next few issues.

The challenge is to respond in writing when you find an idea, concept or comment that bothers you.

The Distribution of the Bulletin

Since the publication of the first issue of the Bulletin, several individuals and organizations have requested changes to the number of copies they receive. With this issue, the emphasis of mailings will continue to be the field force. As the Bulletin is now available on the Intranet (via Kingston.dwan.dnd.ca/pubs/ADTB/Default.htm) all NDHQ, LFCHQ and formation headquarters personnel have access to the electronic version of the Bulletin, whereas this is not true for all personnel in field units. The number of hard copies provided to these headquarters will be reduced while more will be sent to soldiers in the field.

In This Issue

This issue offers six articles on varied subjects.

- Until this century, army operations were two-dimensional affairs. A third dimension resulted from the invention of the airplane and helicopter, which has extended beyond the atmosphere to include the military use of space. The impact of space based systems on army operations is examined by Captain Andrew Godefroy, a reserve officer currently completing a Masters of Arts in War Studies at The Royal Military College of Canada. The Canadian Forces has only recently published its space doctrine, which will remain a joint responsibility.
- Many readers are familiar with "Jadex", General Jacques Dextraze, war hero and Chief of the Defence Staff from 1972 to 1977. In 1973, he put his thoughts on leadership to paper – described by one general officer as the best paper ever written by a Canadian soldier on this subject. General Dextraze's paper is reproduced in its entirety.
- Canadian soldiers tend to limit their study of Canadian military history to our experiences in the twentieth century, and further reduce this to a few battles of the First and Second World Wars. The previous three centuries offer many lessons where "Canadians" played a pivotal role even before this country was formed. Captain John Grodzinski offers an overview of the battle of The Châteauguay, the only major battle fought exclusively by Canadians in the War of 1812.
- Changes in the global environment and the development of new technologies are having a profound effect on so many aspects of warfighting. One area where this has been particularly felt is in the intelligence community. Captain Robert Martyn, Deputy Commanding Officer of 2 Intelligence Company, provides an overview of the current conflict environment, where warfare is going and the impact on intelligence doctrine.
- How safe is safe when it comes to training? Captain Bob Herold, the Ammunition Safety Officer at the Land Force Western Area Training Centre in Wainwright, Alberta, examines risk tolerance,

ammunition safety and the implications of current safety policies on training.

- Although crystal balls have not yet been issued, Canada, along with several other countries has set out to identify trends in the "future security environment" and their impact on defence policy and force structure. Known popularly as "futures" or "futurist" studies, this discipline has moved beyond the global modelling of the 1970s and forms the basis for developing "the army of tomorrow" (five to 10 years into the future) and "the army of the future" (approximately a quarter of a century ahead). Mr Shaye Friesen, a Defence Associate with the Directorate of Land Strategic Concepts in Kingston provides an overview of the future security environment and an extensive bibliography of related publications.

Errata Volume 1, No. 1

- Although the update from the Directorate of Army Doctrine mentioned that there were six combat functions, it only discussed five of them. The omission of "manoeuvre" may have suggested to some that we are still stuck in the mud. According to *Land Force Tactical Doctrine* (B-GL-300-002/FP-000) Manoeuvre is "the employment of forces through movement in combination with speed, firepower, or fire potential, to achieve a position of advantage in respect to the enemy in order to achieve the mission" Manoeuvre affects the enemy physically or morally and implies a degree of audacity.

"Good training not only imparts abilities; it also gives the soldier confidence in his equipment, in his own skills and in the skills of his mates and leaders."

Nobody Moves, Nobody Gets Hurt:
A Major Heresy
Captain R.A. Herold

- There was some confusion over Colonel Semianiw's first name as it differed between this section and the article he wrote on "The Battle Group in the Advance and Manoeuvre Warfare". His first name is Walter. A software problem also led to the first two endnotes being numbered "1" in the text of the article, while they were numbered one to 16 in the endnote section. This can be corrected by renumbering the endnote numbers in the text to follow sequentially from one to 16.

- The maps used in Lieutenant Colonel Cessford's article "Crack Canadian Troops: Clearing the South Bank of the Valli Di Commachio 2 - 6 January 1945" were published through the courtesy of the Directorate of History and Heritage. This credit was not given in the original article.



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From the Directorate of Army Doctrine

Information Operations

It is often said that we now live in the information age as distinct from the industrial and agrarian ages. Each age pertains to economic systems which influence particular social norms and culture, as explained in Alvin and Heidi Toffler's book, *The Third Wave*.¹ Armed forces exist as subsets of national entities and are therefore influenced by the predominant socio-economic trends. Again, the Tofflers have captured the essence of this effect in their book *War and Anti-War*.² Therefore, one of the precepts of present and future Canadian military operations will be the conduct of information operations with the aim of gaining information superiority.

The reader is warned that in this article a number of new acronyms will be introduced. Unfortunately, this is unavoidable as these are in current use within the information operations community. Apart from new acronyms, however, information operations are not new. Information received a prominent place in the 1912 Field Service regulations.³ What has changed are the quality, volume and speed at which a commander receives information. Therefore, Army doctrine writers, considering both operational art and military science, must revise the manner in which the Army handles information both as a function and as an essential commodity of war.

Definition

Information operations (IO) are defined as "continuous military operations within the Military Information Environment that enable, enhance, and protect the commander's decision action cycle and mission execution to achieve an information advantage across the full range of military operations. They include interacting with the Global Information Environment and exploiting or attacking an adversary's information and decision system."⁴

Aim

The aim of this article is to serve as a primer for the Army's soon to be published doctrine manual B-GL- 300-005/FP-001 *Information Operations*. It will introduce the doctrinal approach that the Army has adopted in order to adapt itself to changing conditions.

The Challenge

The sum of all that is known is termed the information universe. (See figure 1.)

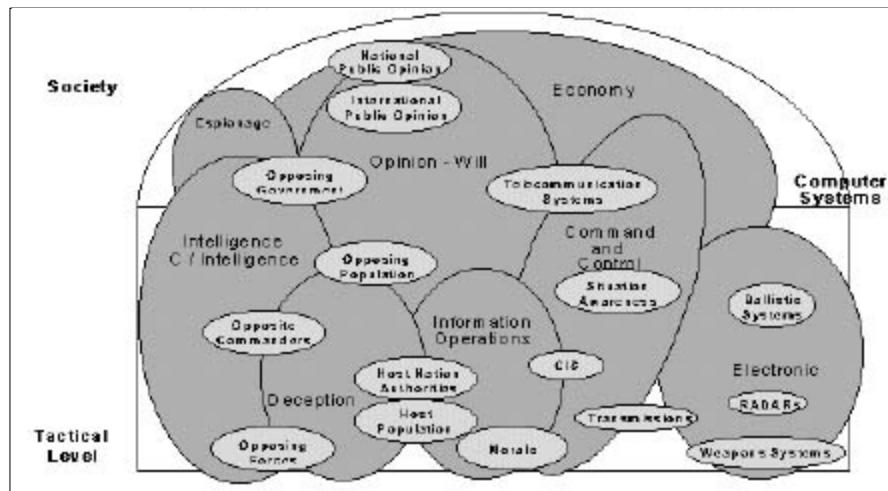


Figure 1: Information Universe

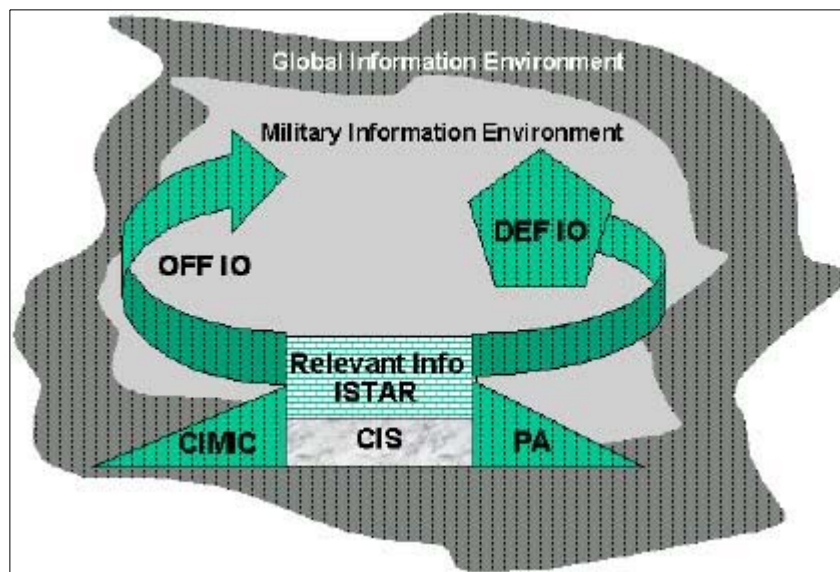


Figure 2: Global Information Environment

Within this universe there is a large amount of information that is available via some form of linkage. This interconnected knowledge and information is known as the Global Information Environment (GIE). Military operations require specific types of information. Therefore, within the GIE there is a Military Information Environment (MIE). (See figure 2.) At times, especially during operations other than war (OOTW), "civilian" information will become of military value and the MIE will expand and contract within the GIE according to operational requirements.

The transition to "non-traditional" areas of military activity under the heading of OOTW is controversial in certain aspects. Canadian Army experience in recent times fixed our military thought on the set piece battle in central Europe in which we played a purely tactical role. The emergence of the information culture has changed this. The information cultural imperative causes the breakdown of the traditional structure, which separated strategic, operational and tactical levels of conflict.

Thus, a tactical unit or subunit may undertake a mission for an operational commander planned in detail at unit level based on strategic intelligence. We are, in this sense, seeing a rebirth of classical military skills in command, at all levels of command, through the availability of Relevant Information, surveillance, target acquisition and recce (ISTAR) and intelligence and the knowledge of how to exploit these. The tradition was that a military commander would have a strong intellectual awareness of the political and socio-economic milieu in the area of operations.⁵ Military thought toward the attainment of objectives, which had been direct and strictly hierarchical in the Cold War, is becoming indirect and cellular in nature. IO enhances our ability to conduct successful operations in our era.

IO will enable mission command, which will lead to fluidity of manoeuvre. That is, different levels of command will adapt more readily to changing mission requirements. New capabilities, however, bring to the fore different problems such as 'need to know' and 'swamping', which relate to the security, protection and the applicability of information.

The predominant technical challenge, in both the global and military information environments, is the selection and sorting of the huge volume of data available to the commander. Data and the mere collection of it must not be confused with understanding or interpretation (see figure 3). Sensor observations on adversarial forces and own forces inputs relevant to the area of operation are mere data until they are processed into an organized, useful format as, Relevant Information. Although, situational awareness is inherently local and relevant only to a particular echelon of the military force, digitization facilitates the sharing of situational awareness both vertically and horizontally. Shared, situational awareness reinforces overall situational awareness and enables decentralized execution throughout the command.

Scope of Information Operations

The concern for the Army is to correctly assess the impact of the information age on warfare and to adapt to whatever new requirements come along. What is clear, however, is that the commander with the best information has a decided advantage. He will know the adversary's strength and deployment in the context of the terrain and weather. He will have a clear picture of the state of his own and other friendly forces. This overall picture is known as battlefield visualization (BV). Effective BV translates itself into information superiority. Information superiority permits a faster and more efficient cycle of estimate -plan -decide -act, which enables a commander to put strength against the adversary's weakness at the right place and time. Thus, IO are a function that directly supports a commander's decision making process, which is a critical requirement given our doctrine of mission command and manoeuvre warfare.⁶ It is IO that enables a commander to concentrate

the effects of combat power at the decisive point.

The Components Of IO

Readers will note that the components of IO are things that have been done for a long time. What is new is that today and tomorrow the synergy attained by taking a coordinated or synchronized approach to IO activities will have a force multiplying effect. In emerging Canadian doctrine IO consists of:

- Communications Information Systems (CIS)
- Relevant Information, ISTAR
- Offensive and defensive information operations measures
- Public Affairs (PA)
- Civil Military Cooperation (CIMIC)

Communications Information Systems

CIS forms the material backbone of IO. CIS consists of all communications, automatic data processing, and personnel involved in acquiring, processing and disseminating information within a command. IO are commonly assumed to be a purely Communications Electronic Engineering (CELE) Branch activity. Quite to the contrary, although CELE Branch personnel have specific managerial and technical responsibilities within CIS, it is an activity that involves every soldier who uses electronic systems to communicate or otherwise processes information. Personnel are key components of an IO system. Individuals' specific talents must be fostered through training and the reliability of individual soldiers must be without question. IO, its personnel, and its products must be trusted to be effective. The target of IO is a human brain, however insulated it may be by technology, therefore personnel are the foundation of an IO structure and human skills are probably the most valuable IO resource.

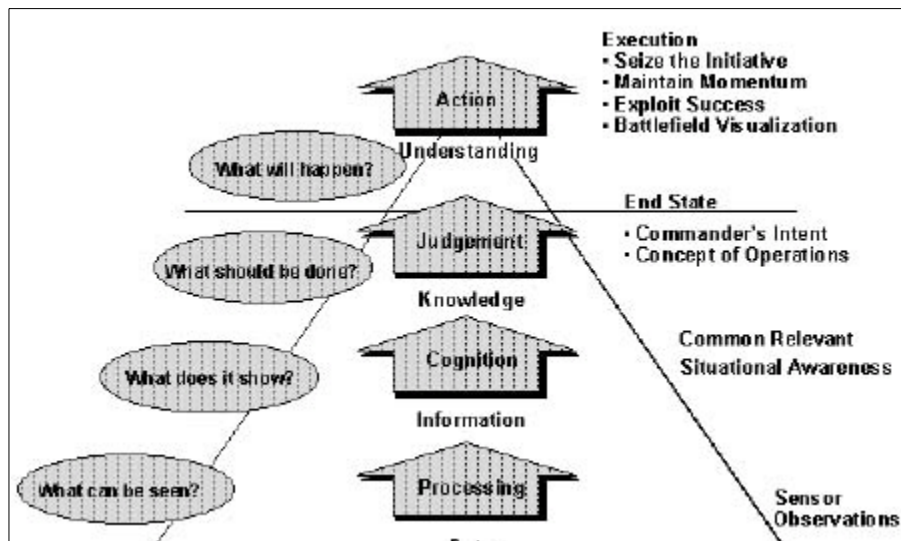




Figure 3: The Cognitive Hierarchy and the Art of Operations

Relevant Information and ISTAR

Relevant Information and ISTAR involves the attainment of own forces or blue situation awareness (BSA), adversary situation awareness (ASA), environmental visualization (EV) and asset visibility (AV). BSA is an awareness of the location activity

"Victory smiles upon those who anticipate changes in the character of war, not upon those who wait to adapt themselves after the changes occur."

- General Giulio Douhet (1869-1930)

and operational readiness state of a commander's own troops and friendly troops in his area of interest. ASA is an awareness of the state of the adversary (and neutral elements). EV is an awareness of physical and human geography, and AV provides a current view of sustainment assets. All of which combine to form an overall situation awareness that enable a commander to plan and conduct operations effectively.

A commander will attain battlefield visualization (BV) through Relevant Information. Staff action will combine the "stovepiped" varieties of situation awareness into overall situation awareness. Situation awareness (SA) is a state of knowledge that relates to the current situation within a commander's area of influence. It requires current intelligence, meteorology, geomatics and comprehensive operational situation reporting combined with timely and accurate reports and returns. Beyond situation awareness, IO must enable a commander's battlefield visualization (BV). BV is a commander's view to the future. It requires predictive intelligence on the adversary and accurate forecasting of own forces' capability for manoeuvre and sustainment requirements in the context of the geography of the area of operations. BV is the result of an effective operational planning process resulting in a commander's visualization of an objective or end state in the context of his area of interest.

Intelligence is acquired, processed and disseminated through the ISTAR system. The ISTAR system recognizes the central coordinating role of intelligence to provide as complete a picture and estimate of intentions of the adversary as is possible. This involves the integration of higher and flanking intelligence materials and information with the information collected by the parent command's own surveillance, target acquisition and reconnaissance means.

The aim of the ISTAR system is to provide the commander with as clear picture of enemy strengths, capabilities, and intentions within the time and space that influence his operations. The system is not to be bureaucratic and it is possible to act or react directly upon single source collection means, such as Coyote or an unmanned air vehicle (UAV), where these systems are proven accurate and the actions are in accord

with the commander's intent.

Information Age Influence On Relevant Information

A feature of the information age is the volume of open source information that is becoming available and is relevant to the intelligence and operational planning communities. Open source intelligence (OSINT) is becoming the key to rapid data base development in an era where crises develop rapidly in regions that had not previously been in focus. OSINT, for example, needs to be protected both from source development and from reliability/accuracy points of view. New areas of interest and source development must be discrete and the information itself must be continually assessed for reliability and accuracy. Sources of information may be open, however, the information itself, once acquired, must be protected against corruption or interference. Similarly, the foci of intelligence collection from open sources require protection as these indicate a commander's intent. Personnel security and system encryption in combination appear to offer the best means of protection at this point in time.

Offensive and Defensive IO Measures

Command and Control Warfare (C2W) is the doctrinal root of the expanded concept of IO. C2W has been thought about and practiced for many years. It has received attention from all service environments, especially from the Navy. C2W is conducted only against C2 means whereas IO are conducted throughout the realm of information in both the MIE and GIE supported by all source intelligence and by CIS. Similarly, C2W was thought to exist in two applications, Counter C2 and C2 Protect. These pertain to the obvious requirements to destroy or disrupt an adversary's means of C2 at the same time as protecting our own. Increasingly, C2W is considered to be a subset of IO. Doctrinally, it is simpler to speak of IO with offensive, defensive applications or some combination of the two. IO operating measures are listed at table 1.

OFFENSIVE IO	DEFENSIVE IO
EW (ECM)	EW (EPM)
Special Information Operations (SIO)	Military Deception
Computer Network Attack (CNA)	Network Vulnerability Assessment (NVA)
PSYOPS	Counter Intelligence
Physical Destruction	OPSEC

Table 1: Ten Operating Measures

Moral and Physical Dimensions of IO Measures

IO will occur in both the moral and physical dimensions of peace, conflict and war. For example, psychological operations (PSYOPS) are planned psychological activities in peace, crisis and war directed to adversary and neutral audiences in order to influence attitudes and

behavior affecting the achievement of our political and military objectives. PSYOPS projects information to a "target audience". Target audiences could be adversarial forces actively engaged in combat operations and/or the civilians of neutral states who are interested bystanders to the conflict and operations. The purpose of a PSYOP is to induce or reinforce attitudes, opinions and responses favourable to our operational activities in a target audience. PSYOPS are based on the projection of a credible message. Therefore, troops engaged in PSYOPS must have a high degree of knowledge about the target culture(s). Similarly, although in the physical dimension, counter intelligence (CI) is conducted in accordance with tactics, techniques and procedures (TTP) designed to counter the adversary's ISTAR system.

Public Affairs

Public affairs (PA) is a command responsibility. Most military operations are conducted under the full glare of public scrutiny. Public perception is a very important determinant of whether or not an operation is successful. National and international news media coverage plays a major role in quickly forming public opinion and in shaping public debate. The news media serve as a public forum for the analysis and critique of goals, objectives and actions. It can influence political, strategic, and operational planning, decisions and mission outcomes.⁷

Civil Military Cooperation

Civil military cooperation (CIMIC) activities establish, maintain, influence, or exploit relations among military forces, civil authorities and the civilian populace in an area of operations (AO) to facilitate military operations. CIMIC elements support military operations by applying their skills and experience in host nations or occupied territories in public administration, economics, cultural affairs, and linguistics. CIMIC personnel have an intricate and important role in providing information for intelligence, operations, and logistics planning purposes.

Interaction with the Five Other Combat Functions

I0 does not exist in a vacuum, it is an integrative function which ties together other aspects of operations. The fundamentals of operations such as speed, mobility, surprise and flexibility depend very greatly on the clarity and timeliness of I0 systems and products.

The following are the linkages as seen from the standpoint of doctrine development:

- Command. I0 provides the necessary information for the commander's decision-action cycle and coordinates all aspects of information including the attempts to degrade the information capability of the adversary.

- **Protection.** In the IO context, protection means the assurance of the security of information, processes, systems and sources to secure a commander's freedom of action. The specific IO activity that accomplishes this is counter intelligence (CI). It is multi discipline counter intelligence (MDCI) because it must estimate and counter the threat from the adversary's ISTAR array. Even so, the information age, and the development of IO, have indicated that protection must encompass more than CIS vulnerabilities. Electronic information security and the very human activity of the preservation and bolstering of morale are critical aspects of protection.
- **Firepower.** Firepower is dependent on the quality and timeliness of targeting information acquired through target acquisition (TA) means. Targets are not purely physical objects but are now thought to include staff and electronic processes as well as human interactions such as morale and unit cohesion. Under IO, PSYOPS can become an aspect of firepower as it targets adversary morale. Intelligence, as one of its tasks under IO, is to support and refine targeting, in part by providing initial assessment of an adversary's vulnerabilities linked to high payoff targets, then to follow up with post-engagement battle damage assessment (BDA). BDA is not limited to counting physical casualties among adversary personnel and equipment, it must now include the identification of indicators that reveal a shift in adversary morale.
- **Manoeuvre.** IO identifies an adversary's strengths and weaknesses (surfaces and gaps) and provides this to a commander in the form of intelligence. At the same time IO provides information as to the status of a commander's own and friendly forces. This combination of Relevant Information and ISTAR results in situation awareness or battlefield vision (BV). BV enables a commander to bring the right forces to bear at the decisive time and place.
- **Sustainment.** Sustainment troops will require IO support through specific types of databases and access to national and allied stocks in order to predict and service sustainment levels. For example, the status and readiness of a commander's units, a major part of friendly situation awareness, are critical to "just in time" resupply. IO must provide a commander with asset visibility (AV) in order to achieve his mission.

Application

Information systems that previously supported combat weapon systems now constitute a weapon in its own right. Instead of restricting the army's focus to the physical destruction of people or equipment, forces can now directly target information or an adversary's information systems to gain an operational advantage. IO will exploit the synergy of technology, information and personnel, to overcome the fog and friction

of battle. The major challenge for IO will be the sorting of useful information from the noise of expanding data.⁸ Nonetheless, perfect knowledge is not an end in itself. The land force objective remains: to enter an operational theatre and accomplish the mission through superior relative combat power and situational control achieved through continuous situational awareness (SA). The diagram at figure 4 illustrates this as an adaptation of the hierarchy of information shown at figure 3. One should also note the estimated limits of automation that will assist the process as indicated at figure 4.

The result of effective situational awareness must be the superior application of combat power. Information age warfare has the potential to be very bloody given the increasing accuracy of weapons systems and lethality of munitions. Gaining and maintaining information superiority at the right place and time will contribute significantly to the maximization of our combat effectiveness and the concomitant minimization of our casualties.

Information operations must be planned and coordinated with the other combat functions to ensure appropriate synchronization for intelligence, information, C2W, CIMIC and PA in order to win the battle. The COS or G3 plans, controls and directs IO planning. At division level a staff cell will be provided to support the COS in planning and coordinating IO. At brigade or unit, staffs may be created depending on the operation and the allocation of IO capabilities to develop an IO concept that best supports the mission and is synchronized with the overall concept of operations.

Synchronization of IO is absolutely critical to achieving success. Proper synchronization will focus the effect of the entire range of intelligence, surveillance, target acquisition and reconnaissance systems at the decisive point in time and space. A simple matrix is designed to array time-phased objectives along a horizontal axis against units or capabilities along a vertical axis.

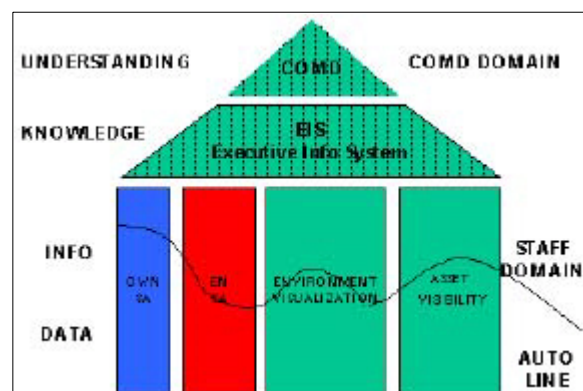


Figure 4.

IO in Operations Other Than War

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within a coalition. Nonetheless, it must be expected that the deployed Canadian force could be given a regional responsibility within a coalition area of operations (AO). It is not unlikely that Canada could be the lead nation in certain settings involving operations

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IO in Operations Other Than War

Canadian army doctrine expects that operations will be conducted within a coalition. Nonetheless, it must be expected that the deployed Canadian force could be given a regional responsibility within a coalition area of operations (AO). It is not unlikely that Canada could be the lead nation in certain settings involving operations exploiting information to win international support for their rebellion. The sympathy of the GIE media for the Chechens served to undermine Russian morale among both the troops in the field and civilians at home. Russian troops often did not understand the Chechen people and, while cultural differences are to be expected, the Russian Army did not deploy PSYOPS, PA or CIMIC organizations in order to counter balance the situation. The degree of cultural clash between Russian troops and Chechen civilians adversely affected Russian morale and made Chechen resistance stronger.

Canadian troops in Haiti have used IO, in their Military Information Support Teams (MIST), to make the local population aware of Army policies and the activities that will flow from them. In a culture which had been used to official secrecy and state sponsored terror the MIST

activities have been instrumental in keeping the good will of the Haitian population. Canadian soldiers of Haitian background, who understand the culture of Haiti and are able to speak the patois of the country, have been able to defuse issues and calm incidents through the medium of simple human communication. In addition, MIST capabilities assist in creating understanding of local problems and concerns which increases the likelihood of an appropriate course of action on the part of commanders and troops in an unfamiliar and potentially volatile operational setting.¹⁰

Operation Context: Implications of the GIE

The Army must expect that its activities will be subject to scrutiny and comment within the GIE as a matter of course. It will be the case that deployed forces will have to plan for this eventuality and therefore the MIE will expand to encompass areas and activity not normally encountered in routine training.

Effective IO are necessary to support all of the other combat functions. Therefore, IO must be a feature of routine training at all levels. While detailed ability in IO planning and procedures may reside at command level, broad awareness of IO must be developed within the Army given the context of modern operations. Similarly, the Army must become adept at linking the IO systems of the force in contact with the larger and more capable IO system at home, which is now being termed a "split-based" operation. This is because, initially, relatively junior levels of command may be actively deployed with only limited capabilities vested in a National Command Element (NCE) in theatre. Split-based IO will permit smaller deployments but greater capability given that these will link to national assets at home.

The use of civilian infrastructure such as the Internet, print media, radio and television networks, will permit the Army to expand its capability to collect and exploit information. This will force reinterpretation of certain principles of war, for example, SECURITY that usually meant protecting information about the force. In many settings, SECURITY may come from transparency, that is broadcasting the role of the force and the intent behind its specific operations with a view to dispel fear and hostility based on misunderstanding or deliberate misinformation campaigns by adversaries.

Conclusion

The adoption of IO as a combat function by the Army is due to several implications of the information age, including:

- technological advances leading to increasing interconnectivity with rapid electronic means of

"Know the enemy as you know yourself and in a hundred battles you will ever be victorious."

- Sun Tzu

communication; and

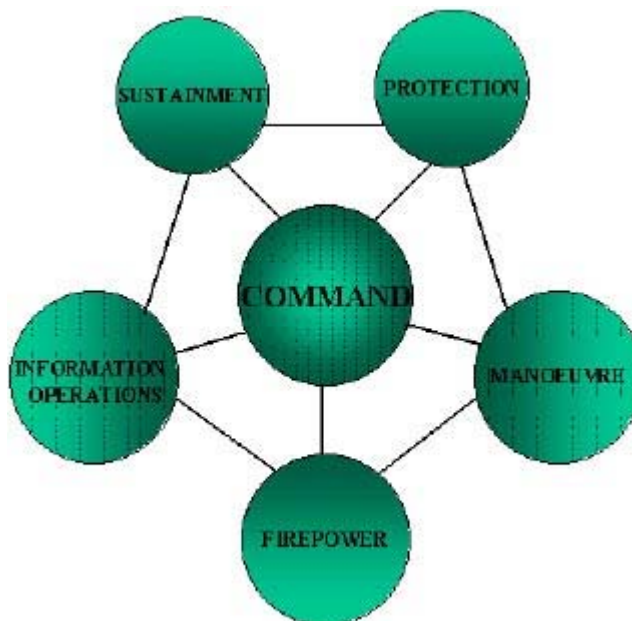
- the MIE is not isolated but is in fact an integral part of the GIE.

Traditional protocols between levels of command will become more fluid in execution. Therefore, commanders at all levels absolutely require an integrated awareness and visualization of the battlefield or area of operations (AO). Simultaneous views of the adversary (or belligerent forces in peace support operations), own forces, the physical operating environment and the status and disposition of civilian populations involved.

Canadian troops require an accurate and clear picture of their present and planned circumstances including accurate asset visibility, the adversary's disposition and likely courses of action, environmental visualization and the expected reactions and patterns of interaction on the part of individuals and groups in the local population. The IO function will provide the means for Canadian troops to minimize their own casualties while concentrating their maximum combat effects at the decisive point in time and space to defeat the adversary and achieve their commander's mission.

The political object is the goal, war is the means of reaching it and means can never be considered in isolation from their purpose."

- Carl von Clausewitz



The Integration of Combat Functions

1 Alvin and Heidi Toffler, *The Third Wave*, Morrow: New York, 1980.

[\[Return\]](#)

2 Alvin and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century*, Little Brown and Co: Boston, 1993. [\[Return\]](#)

3 Field Service Regulations 1912, Vol. II, see chapter 4. [\[Return\]](#)

4 B-GL-300-001/FP-001 *Conduct of Land Operations – Operational Level Doctrine for the Canadian Army*. [\[Return\]](#)

5 Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret, (Princeton: Princeton University Press, 1984) 75-89. [\[Return\]](#)

6 See *Dispatches*, Vol 5 No 1, March 1998. [\[Return\]](#)

7 See *Dispatches* Vol 4 No 3. [\[Return\]](#)

8 See Paul Van Riper and Robert H. Scales, Jr., "Preparing for War in the 21st Century". *Parameters*, Vol. XXVII (US Army War College, Autumn 1997), 4-14. [\[Return\]](#)

9 See Charles L. Dunlap, Jr., "21st Century Land Warfare: Four Dangerous Myths", *Parameters* Vol. XXVII No 3 (US Army War College; Autumn, 1997) 27-37. [\[Return\]](#)

10 See the Army Lessons Learned Centre's *The Bulletin* Vol 4 No 3, February 1998. [\[Return\]](#)



[\[Français\]](#)

From the Directorate of Army Training

Training Issues for the Upcoming Year

The Directorate of Army Training is taking the opportunity with this issue of The Army Doctrine and Training Bulletin to outline the significant activities that will be the focus of the training staff effort over the coming months. These efforts are closely tied to the "Renew Leadership" and "Rationalize Training" strategies published in the *Land Force Strategic Direction and Guidance* and have resulted from a detailed study of the work required to achieve both strategies. The work will continue through to "The Army of Tomorrow" _ about 2005 - following a priority determined by the Army Training Authority (ATA). This information is provided in order that other directorates within the Land Staff, various headquarters, units and individuals are aware of our short-term efforts and, more importantly, contribute their knowledge and expertise to result in better army training.

Communication is critical as we navigate through this period of change. An attempt to provide weekly email DAT SITREPS has proven valuable but the format less than effective. The Army Training Authority (ATA) has directed that a monthly report entitled "Army Training Significant Activities" be issued via email to summarize ongoing issues. The first report was issued at the end of September. Feedback on content and distribution is expected. The second communication issue is "Army Information Management" as it pertains to training. A policy is forthcoming which will provide a clear structure of policies, directives, procedures and guidance to be put in place. The current system of written Land Force Command Orders has proven difficult to maintain and distribute. A format and structure for ATA training direction will be part of the new information management policy.

It has been pointed out by the Office of the Auditor General that much of the basic training data to allow informed management decisions simply does not exist. As part of our effort to develop and establish proper management tools this data must first be collected and analyzed. The method of doing this is being determined, however your support will be crucial as we try to determine resource costs for specific training events, how cohesion is affected by personnel turnover and taskings, how Battle Task Standards (BTS) are used and evaluation conducted, how vehicle availability affects training and whether individual qualifications sufficiently support collective training, etc.

And now to the specific items upon which we intend to focus over the coming year.

Staff effort in DAT 2 (Individual Training) includes:

- Adjustment of the Junior Leaders' Course. The Canadian Forces Recruiting, Education and Training System (CFRETS) is

responsible for the Training Standard (TS) for Part I of the course and army delivery will more closely match the TS. Our aim is to standardize delivery countrywide. The Infantry School as the designated Centre of Excellence, for this course, will also study the feasibility of prioritizing/grouping the course content in standard blocks for the Reserve Force.

- The Unit Qualification List (UQL) as a means of quantity control has been finalized and implemented at the Combat Training Centre fall booking conference. Thanks are extended to all Land Force Areas for their assistance in developing this tool. Required adjustments to the start state will be determined through the proposed data collection and analysis process.
- Some 25 individual courses were validated over the past year through follow-up questionnaires to students and supervisors. This effort will continue to ensure that our formal training is meeting your requirements. An online verification tool has been developed which hopefully will ease the burden of paper reports and will assist in our examination of the data input.
- The formation of the Militia Training Review Board (MTRB). This board will require extensive area and reserve representation as it will examine Militia trade progression corps by corps to ensure that skill requirements are realistic and achievable. The MTRB will be established this fall in order that potential changes in training can be implemented by summer of 1999.

DAT 3 (Collective Training) will focus on:

- Completing the Battle Task Standards (BTS). Copies of Interim BTS are available now on the DIN (through the Army Electronic Library) and are included on the Lessons Learned Information Warehouse Version 7. Please use them in the planning, conduct and evaluation of collective training between now and the spring campaign season. Your criticism and suggestions are important, as the staff will begin writing the final versions next June. Priority will be given to the combined BTS (Battle Group and Combat Team) followed with the corps standards as staff effort is available. Several standards remain to be written: intelligence, military police, aviation and the decision-making process. The latter is intended to provide guidance on command and staff functions within a headquarters, from battle group to divisional level.
- The issue of an automated tool entitled the "Army Risk Assessment Model" (ARAM) intended to assist units in the planning of training and ongoing management of resources. ARAM will have the ability to cost resources required to train at any level for each BTS.
- Individual Battle Tasks (renamed from Individual Battle Task Standards). This policy stipulates individual Minimum Level of Capability (MLOC) and Deployment Level of Capability (DLOC)

to be achieved annually dependent upon readiness level. The policy will be published at the same time as this edition of the Army Doctrine and Training Bulletin and released as a Land Force Command Order by the end of October.

- Production of Army Evaluation guidance.
- Implementing a Field Firing Refresher Training package for those sub-unit commanders charged with the responsibility for planning and conducting this training.

DAT 4 (Future Concepts) will be responsible for:

- Producing *Army Training* (B-GL-300-8/FP-001), a compilation of our training principles.
- Producing an Army Training Strategy. This document will summarize ATA solutions to address current problems in the Army Training System.
- The definition and development of ARAM software with the aim of providing ATA with management oversight into the Individual Training System.
- Development (in conjunction with Director Land Force Readiness) of a Readiness Model that defines unit (both Regular and Reserve) notice-to-move in terms of training standards and personnel/equipment readiness. This model will also attempt to define the training delta for individual Reserve Force augmentation at each rank level.
- Completion of a simulation strategy and simulation training policy.

DAT 5 (Leader Development) will focus on:

- Confirming the validity of our Army Leader Development Model for both officers and NCMs.
- Completion of current Canadian Forces level work at CFRETS to develop training standards and training plans for each officer developmental period. This follows the recent approval by the Military Development Council of a new Officer General Specification (OGS).
- Completing a new Army Environmental Specification based on the revised OGS. This document will specify the additional skills and knowledge required of every officer in an army uniform.
- Beginning work on the revision of each officer Military Occupation Code (MOC) specification. The officer specification review beginning with the OGS is a first principles analysis which will eventually result in revised individual training in the three year timeframe.

- Beginning Canadian Forces level staffing with CFRETS to revise the NCM General Specification. Army NCM Specifications and Army NCM MOC reviews will follow with the aim of completion by early spring 2000.

Other training staff initiatives include:

- Training Integration Efforts. DAT staff are heavily involved in the training requirements associated with the introduction of new equipment. These programmes include Tactical Command, Control, and Communication System (TCCCS), LAV 3 and Land Force Command System (LFCS).
- Shoot-to-Live publications are in the process of a complete revision. There will be two volumes—one specifying small arms practices and the second, currently being written by the Infantry School, which focuses on shooting technique.
- *Training Safety* (B-GL-300-4(3) FP-001) was previously a J3 responsibility which has been transferred to DAT. The publication requires extensive revision to be completed over the next several months.
- The Army Training Cycle Implementation Plan was presented to Army Council for approval at the end of September. DAT will be involved in further development dependant upon direction received.
- A training needs analysis will be conducted into Air Defence Live Fire requirements. It is intended to produce training direction by late spring of 1999.
- Guidance to units for the conduct of physical fitness training.
- Production of an updated multimedia policy.
- Production of an updated distance training policy

That concludes the major components of a very ambitious work plan.

The following article was produced by Captain Laurent Vaillancourt, a Training Development Officer at DAT, responsible for the validation of individual training courses. His deductions and comments are worth a careful review. Validation is the last step in the Army Systems Approach to Training—crucial to the continued effectiveness of individual training courses, but generally poorly understood in terms of purpose, function and process.

A revised DAT staff list and various means of contact are included at the end of this publication. The changes are a result of some recent postings and change of duties.



[\[Français\]](#)

From the Directorate of Army Training

Rationalize Training - 18 Months of Validation Studies

Rationalize Training

The current Land Force Strategic Direction and Guidance (LFSDG)¹ outlines the strategic goal to "Rationalize Training". "Rationalize Training" is defined as "train[ing] to need, based on one common system and standard, and in which the training is delivered in the most effective and efficient manner". The army has a requirement to ensure that soldiers are combat ready but must do so in a manner that is sustainable given limited resources.

The past practice for the army was to train to the production capacity of the training system. The result was over-training which not only cost money but was ineffective as it produced a large number of graduates who had no requirement for the training and hence did not apply it. The consequence for non-application of training is that skills deteriorate if they are not used or practiced. Past research indicates that task performance decreased from 10 to 50% after six months of non-utilization and 35 to 90% after one year.²

So how does the army ensure that it is training the right number of people at the right time and at the right cost? It uses the Army Systems Approach to Training (ASAT)³, a management model designed to control the quality, quantity and the resources dedicated to training. The ASAT is based on the Canadian Forces Individual Training and Education System (CFITES), and contains phases that analyze training requirements (specifications and training standards), design and develop training (training plans and lesson plans), conduct training, evaluate results and validate the effectiveness of training.

Validation is the final phase of the ASAT process. Its purpose is to verify that the training system has adequately prepared - and continues to prepare - graduates to perform operational tasks to meet specified departmental goals. Validation is a

*Do we really want to know the results?
Can we afford not to?*

means through which any army authority can audit the Army Training System. In other words, validation verifies that the right people are getting the right training at the right time in order to meet operational requirements. To ensure that the army trains to need, one of the questions that validation has to answer is: "is the graduate employed in a position that required the training that was provided?" Application of training is crucial in today's world of budget constraints as the army cannot afford to train personnel who do not immediately require specific skills and knowledge.

The Cost of Non-Applied Training

A renewed validation process has been in place since January 1997 and to date, thirty-two courses have been validated. A total of 560 graduates responded to validation questionnaires, providing the Directorate of Army Training (DAT) with information training. This information was analyzed by the validation cell within DAT to determine trends related to the application of training, hence to "rationalize training". The validation cell, in response, forwarded detailed reports to the Centres of Excellence (CoE) responsible for delivering the training that was examined. These reports provided both quantitative and qualitative data accompanied with recommendations to improve the quality of training.

An informal study focused on the application of training was conducted based on the aforementioned courses. The study included 32 courses divided into two categories: career courses (QL3 series, QL6B series, or Militia Officer Staff Course (MOSC)) and non-career courses (Unit Embarkation, Jumpmaster or Advanced Pioneer). Twenty courses were identified as career courses while 12 were identified as non-career courses. The total number of respondents was 560 divided as follows:

- a.390 respondents attended career courses; and
- b.170 respondents attended non-career courses.

There were major differences in the results between the two groups studied (Figure 1). The respondents who had attended career courses indicated that 80.5% (314 of 390) were applying the training six months after graduation. Seventy-six (19.5%) were not applying the training at that time. From those 76 respondents, 28 (36.8% of the non-users) indicated that they were likely to apply the training between six and twelve months after graduation. When both figures are added, 87.6% of the respondents who attended career courses were applying or were likely to apply the training in the year following graduation. However, that means that 12.4% were not using the training six months after graduation and that they were unlikely to use it in the near future.

One hundred and seventy respondents attended non-career courses. From this number, 48.2% (82 of 170) had applied the training or were employed in a position that required the training six months after graduation. Eighty-eight respondents (51.8%) of the total

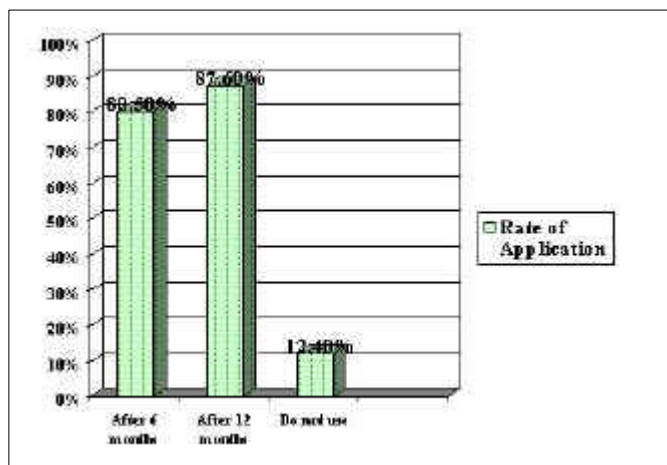


Figure 1: Application of training for respondents who attended career courses (n=390)

respondents had not applied the training when surveyed; however, 40.9% (36 of 88) of the non-users mentioned that they were likely to apply it between six and twelve month following graduation. When both figures are added, a total of 69.4% of the respondents who attended non-career courses were applying, or were likely to apply the training in the year following the completion of training. However, this means that 30.6% were not using the training six months after graduation and were not likely to apply that training in the near future.

An important factor to reflect upon is the number of respondents who had not used the training six months after graduation but responded that they were **likely** to use it within the next six months. If the respondents are not using the training now, the supposition that they may in the future is unfounded.

Many of the respondents are unsure of their future employment and can only guess if they will use the training or not. For example, five out of eight respondents not currently utilizing the training from the Advanced Pioneer Course said that they were likely to use it in a near future (next six months). Is that accurate? If surveyed in six months, would the results reflect this? Obviously, only a formal re-evaluation of the application of training one-year after graduation could answer these questions.

Based on the statistics (combination of career and non-career courses), it can be extrapolated that approximately 29% of trainees across the Army did not apply the training they received within six months of graduation. This is significant.

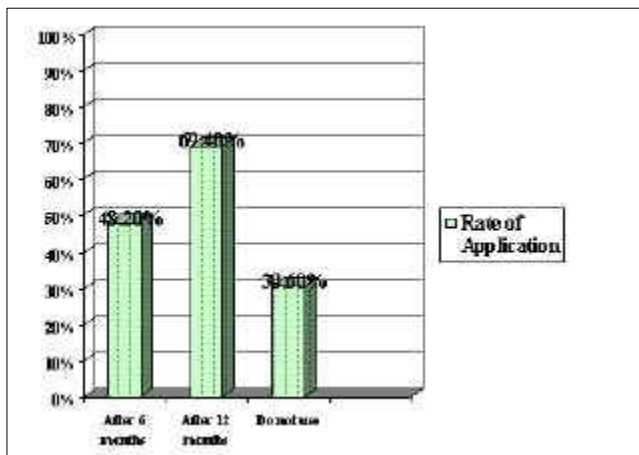


Figure 2: Application of training for respondents who attended non-career courses that skills deteriorate (n=170)

if they are not used or practiced. Task performance decreases from 10% to 50% after six months of non-utilization and as much as 35% to 90% if the training is not used after one year.⁴

The second implication is the cost of training. In these days of limited resources it is crucial that training funds be spent wisely. For example let us examine one serial of an army course with 10 students and an average cost per student of \$5000.⁵ Assuming that 29% of the graduates do not apply the training within one year, the cost is \$14,500 for something not utilized. These lost training dollars are just for one course. Hundreds of courses are conducted annually and we have to ensure that training

dollars spent are directed to producing a more combat ready army.

Reality and the Way Ahead

The failure to apply training has been recognized as a potential problem for the army. Current training management processes like validation and future initiatives such as Verification and the Unit Qualification List (UQL) will assist the army in minimizing this problem. However, it is understood that a 100% rate of application of training is neither feasible nor realistic. There are courses like first aid, CPR, or tasks like firing the rifle, that will be only used in operations or emergencies. These tasks, if not used, still need to be taught to ensure that basic operational requirements are met. On the other hand, if there is a need for twenty or thirty pioneers in an infantry battalion, why train forty or fifty?

Training resources have to be used in a cost-effective manner and a high rate of non-application of training is certainly not meeting that principle. It is important to remember that the purpose of quantity control, which applies to each Canadian Forces member, is to ensure that Individual Training and Education (IT&E) is given to the right people at the right time for the right cost.⁶ Training has evolved from an "offer driven" to a "demand driven" approach. This means that training should be requested only if needed, and be based on operational requirements and guided by tools like the Unit Qualification List (UQL). As one method of controlling high value training, the Chief of the Land Staff directed the development of a Unit Qualification List (UQL). The UQL is a medium to control the quantity aspect of training by defining its training needs and providing a tool against which training requests can be assessed.

UQLs will be used to both establish the 'need' for training (from a unit's perspective) and to conduct an audit, using ITMIS data, for courses to be conducted. For example, units will look at the UQL requirements versus actual qualified personnel in the unit. If they are authorized to have 12 armoured gunnery specialists and only have eight, there is a need to send four soldiers on course and will submit this requirement. When all of the requests are compiled and turned into course serials, the Army Individual Training Authority (AITA) will conduct an audit. ITMIS data will be used to double-check the requests versus the actual number of personnel qualified in the units. If there are an equal or greater number of personnel already qualified in the units than authorized on the UQL, they will query the requests. There may be compelling reasons for a unit to train excess personnel and this check is not meant to be an automatic no every time the numbers do not agree.

In the near future, the validation process as it is now known will be incorporated into a new process called "Verification". The implementation of this new system was deemed necessary to measure the performance of IT&E activities. Verification will be a decentralized process responsible for collecting data related to quality, quantity and resource consumption attributed to the training and education conducted within the army. The system is designed to be transparent and make use

of existing processes and data gathering instruments. Furthermore, data will be analyzed to ensure that the IT&E activities are conducted in an efficient and effective manner.

The Bottom Line

Training must be rationalized. The army cannot afford to conduct unnecessary or mis-timed training. The Directorate of Army Training is addressing this issue by conducting validation studies (34 scheduled for the time period September 1998 to September 1999), finalizing the UQL and developing the policy and tools to support the Verification process. Some may feel threatened by these processes and resent "big brother" looking over their shoulder. However, the reality is that we have the responsibility to ensure that resources are responsibly allocated to training to ensure that the army of the future is combat ready. Can we afford not to?



Endnotes

1 1998 *LFSDG*, available online on the DIN at: http://army.dwan.dnd.ca/dlsp/lfsdg_e. [\[Return\]](#)

2 Hagman, J.D., & Rose, A.M. (1983). *Retention of Military Tasks: A Review*. Human Factors Society. This report was commissioned by the U.S. Army Research Institute for the Behavioral and Social Sciences. [\[Return\]](#)

3 Land Force Command Order 23-18 dated May 1995. [\[Return\]](#)

4 Hagman & Rose (1983) [\[Return\]](#)

5 Data was captured from the ITMIS database. [\[Return\]](#)

6 ADM PER 4/94. NDHQ Instruction ADM(Per) 4/94 Individual Training and professional Development Management Framework, 31 May 1994. See also A-P9-000-001/PT-000, Canadian Forces Manual of Individual Training and Education, Volume 1, Canadian Forces Individual Training and Education System-Introduction/Description. [\[Return\]](#)

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The Modern Umbrella

Space Assets As A Force Multiplier In Land Warfare

Captain Andrew B. Godefroy

The twentieth century has been witness to many significant revolutions in military technologies, which have redefined the way nations wage war against one another. From the tank, to the jet aircraft, to the nuclear bomb, leaps in military capability have affected not only the operations and tactics right down to the individual soldier and his weapon, but also the theory and doctrine of war fighting right up to the strategic and political level. With the appearance of weapons of mass destruction (WMD) in the arsenals of "the big five" after the end of World War Two, many military theorists prophesized that the face of war and military operations other than war had forever been defined. This however, was not to be the case. In the latter half of the twentieth century the human species has moved the potential battleground beyond the realm of its own world and outward into space. Where once it was decided that WMD had secured all key terrain, military exploitation of outer space has shown strategic thinkers that there is indeed a new vital ground. For more than 35 years outer space has been integral to the security of the major powers of the world, and has become an area of concerted interest to others. Its inclusion as a factor in security and defence policy has had a revolutionary effect on the concepts of military doctrine, and as such, the realm of outer space as a sphere of operations can no longer be ignored. Space power has become central to the achievement and maintenance of global reach for both NATO countries and the Commonwealth of Independent States (CIS), and will assume as decisive a role in future wars as air power has done and is doing in the present day.

The aim of this essay is to highlight the impact space assets has on the modern land environment. For the most part, battlefield commanders through no fault of their own are still very ignorant of the composition and capabilities of space assets, how to access them, and most importantly, how to incorporate space into the battle plan.

More and more countries are getting access to space products or are launching their own indigenous military space programs. The land force commander who chooses to ignore the effects of space assets on the battlefield may have made his last poor command decision.

"The land force commander who chooses to ignore the effects of space assets on the battlefield may have made his last poor command decision."

Space assets are often considered a coveted arm of the airforce, with no application nor impact on the land warfare environment. True enough, space assets are for the most part, launched, controlled, and maintained by the airforce, but the satellites they control have applications that are

useful to all branches of the military. In fact, some aspects of space assets have made such a significant impact on terrestrial operations that strategic thinkers have begun to reevaluate the basic principles of warfare. However, before delving into the cause and effect of space on the land environment one must first examine what exactly is the composition of space assets relevant to land operations. Just consider the following scenario:

Lieutenant Bloggins of the 9th Combat Engineer Regiment checked the daily Cross-Country Movement (CCM) and Road and Bridge (RB) traces at headquarters once more before setting off on his reconnaissance of the potential bridging sites. The area study provided by the intelligence cell earlier in the week showed several possible routes and crossings, but this morning's near real-time satellite photos showed that the enemy had flooded much of the west side of the river by destroying several dykes to the north. The terrain analysis and Information Preparation of the Battlefield (IPB) would have to be redone before any further engineer operations were planned. Worse still, infrared and thermal imaging photo-reconnaissance detected an increase in enemy vehicle-mounted defences on the far bank of the river. Bloggins would have to swing farther south across featureless terrain to approach the river unseen. To top it off the U.S. military weather satellite forecast showed more rain on the way. He was not worried though. Climbing back into his jeep he handed his driver the coordinates to enter into the Global Positioning System (GPS) receiver. Once ready the two sped off south before turning east. While the driver concentrated on the route, Lieutenant Bloggins took another look at his new 1:50,000 scale map, produced fresh from high-resolution satellite images taken the day before yesterday. He had marked in the flooded areas, which was a much easier task on this map than on the Michelin road guides he had been forced to use when he first arrived...

Though the above passage describes a fictional scenario, it is grounded in the reality of modern day military operations supported by space assets. Traditionally, space assets have only been recognized for their impact at the strategic level, such as in the case of the Strategic Defence Initiative (SDI) or the more modern National Missile Defence (NMD) programs. The reality is that the majority of both civilian and military space assets are employed at the level of space support - which encompasses launching capability, controlling space assets, and the ability to repair space assets; and force enhancement - which includes issues relating to war fighting on land, sea, and in the air.

Though the Gulf War has been increasingly labelled as the "first satellite war", in fact space assets have acted as force multipliers in conflicts dating back to the 1960s.¹ During the Vietnam War the Americans employed both communications and remote sensing satellites in direct support of ground operations. Geostationary communications satellites were developed jointly by the Defence Department and NASA, coming into service in July 1967. Space relayed communications were slow, but it had the advantage of clarity that ground-based communications could

not provide in the dense jungle. A year and a half later the first satellite designed specifically for use in counter-guerrilla warfare, called TACSAT, was launched. Once in orbit, TACSAT assisted in locating enemy movement by linking remote seismic and acoustic sensors through itself to ground stations set up to track potential targets. Though primitive and unable to distinguish human from water buffalo, it was the first attempt by the Americans to use space as a force multiplier in combat.²

With the continual improvements in the capabilities of satellites during the Vietnam period, American space technology was moving stubbornly towards real-time operations capability. The first generation of military satellites provided information on weather forecast, communications enhancement, and limited enemy intelligence. Because the information took so long to be received, analyzed, and disseminated, it was of limited value during the Vietnam War.³ What were of value however, were the lessons learned about the potential of military space assets. The Vietnam War had forced the USA to consider the greater aspects of military space capability and the need for operational space systems in its planning, command, and control, of air, naval, and land combat.

The Soviet Union had its own indoctrination to satellites as a force enhancer during its brief clash with China in 1968-69. After the first battle of the Ussuri River in late February 1969, Soviet Secretary-General Leonid Brezhnev desperately needed to

"Though the Gulf War has been increasingly labelled as the 'first satellite war', in fact space assets have acted as force multipliers in conflicts dating back to the 1960's."

ascertain the extent of the Chinese military capability along the Sino-Soviet border. While Chinese air-defence could effectively repulse Soviet air reconnaissance attempts it had no way of stopping Soviet military space assets from over-flying Chinese territory. Between 25 February and 25 April 1969 the Soviets launched more than ten surveillance satellites solely for use in this conflict. With an average life expectancy of eight days the satellites returned both high and low-resolution photographs of thousands of square kilometres of Chinese territory.⁴ The intelligence data verified that the incursion was not the precursor to an all out invasion.

The Soviets continued to launch a series of photo-reconnaissance satellites, often at short notice, which demonstrated the maturity of their military space program. Renewed fighting with the Chinese at the Amur River in the early summer of 1969 provoked the launch of fifteen additional satellites into a Low Earth Orbit (LEO). In 1971 more satellites were placed into orbit to monitor the Indo-Pakistani War. Two years later Russian satellites came to the aid of Soviet client states involved in the 1973 Middle East War, which had great potential for dragging both of the superpowers into the conflict.⁵ The Egyptians made use of satellite imagery both in the planning and execution phases of the war. Unfortunately the additional resources did not make the difference on the ground. Every day around noon, the Soviets captured high-resolution

photos of the Egyptian Army being decimated by the Israelis.

By the beginning of the 1980s, the use of space assets as a force enhancer was rapidly evolving in new directions. While both communication and photo-reconnaissance satellites were already well towards becoming a staple in military operations, other non-weapon military space assets were being developed. Satellites were being designed to assist in meteorology, geodesy, navigation, targeting, search and rescue, signals intelligence, and early warning. As warfare moved towards the information age both the need and desire for improved intelligence gathering systems increased. Though space systems were not the only means available for gathering information, satellites provided a definite edge in many areas. Other abilities such as accurate navigation, early warning, and targeting could only be achieved through the use of space assets. Overall, the pervasive influence and potential for augmenting military prowess was rather self-evident to military planners.⁶ Doctrine and tactics in all the services were also modified in reaction to the emergence of space assets on the battlefield.

Given the present availability of advanced weapon systems, in particular ballistic missiles in the arsenals of most states, extensive space capabilities have become essential to the effective deployment of armed forces in any theatre of operations.⁷ Enhanced satellite abilities have altered the way in which engagements are fought and will be fought in the future. Both the USA and Russia have long recognized the necessity to support a rapid and responsive military force with a wide variety of space assets. The need was doubly reinforced after the 1990-91 Gulf War. As the 1990s draw to a close, other states are moving on this issue as well.⁸ For example, among the many lessons that France took home from the 1990-91 Gulf War was the indispensability of military space assets.⁹ The war illustrated the importance of satellite intelligence systems to operational mobility and independence. During the conflict France felt its dependence on US space assets was flagrant, and that it denied French forces to act independently if required. Since the end of the war France has increased its military space budget by approximately 20 percent annually, and has instituted four new military space programs. By the end of the decade France plans to have advanced Earth imaging, infrared imaging, synthetic aperture radar, and electronic intelligence gathering means in orbit.¹⁰

Terrestrial forces will become increasingly adjunct to orbital assets as a result of having space-enhanced war fighting capabilities. In areas such as reconnaissance, weather monitoring, navigation, mapping, and communications, commanders in planning and conducting operations will make full use of the space assets afforded them. Likewise they will also have to learn how to defend against an enemy's use of space assets. Consequently, the way in which warfare is conducted will be altered to fully exploit these new resources and meet these new challenges. The goal is to provide the planner of joint operations with superior information, command, and control capabilities and the military

commander with information dominance on the battlefield. With an increase in battlespace (i.e. area of operations) awareness, commanders can improve their ability to manoeuvre and concentrate their forces, thereby increasing their chances of victory.¹¹

In terms of reconnaissance, the frequently available and highly detailed digital imaging of the Earth that space assets

"Enhanced satellite abilities have altered the way in which engagements are fought and will be fought in the future."

can provide has resulted in a significant augmentation of ground capabilities. Space reconnaissance assets have unrestricted access over any battlefield, providing early warning of attacks, targeting intelligence, technical intelligence on enemy strengths, and bomb damage assessment.¹² This in turn has resulted in a clearer picture of the battlefield, more complete intelligence preparation, and more informed leader decisions. The quality of imaging that can be achieved from space-based observation is nothing short of impressive. In terms of resolution, ten countries already have systems in orbit that can image anything one meter or larger in size.¹³ What that means is bridges, roads, units, ships, and even individual aircraft and people can not only be recognized but also identified. Many other countries such as South Korea, Pakistan, South Africa, Taiwan, Argentina, and the United Arab Emirates, have all expressed an interest in developing their own remote sensing systems. In the interim they can buy imaging through uncontrolled licensing agreements on the open market from France, Russia, or the USA. The range of imaging is also extensive, from optical systems (including infrared, microwave, and radio) to active radar systems. The latter is more effective, being able to penetrate cloud cover easily and operate during periods of darkness. The timeliness of image processing is also constantly improving. For example, the Australian Center for Remote Sensing can process a 20-meter resolution relief radar image of a 62-mile square area from a satellite in just 2 ½ minutes.¹⁴ With such extensive coverage capability, also available commercially, there is little doubt that in the future all land warfare will be conducted under observation.

The implications of warfare under such conditions are serious for commanders on the ground. Potential adversaries will be able to prepare for a battle in the same way an allied commander does. Furthermore, once engaged, adversaries can easily track the commander's movement on the battlefield, greatly reducing his chances of achieving an advantage by surprise. Time becomes an increasingly important factor. In the past, air superiority ensured the safety of rear-echelon units, depots, railheads, runways, and seaports. With satellite imagery that can be updated at least bi-weekly, combined with ballistic missile capability, enemies can now track and target rear echelon activity without needing to invest in local air superiority. For commanders, this means rear units and supply nodes may have to relocate on a regular basis to avoid becoming an easy target for attack. Furthermore, with the increasing potential of having to fight and manoeuvre under constant observation, commanders will have to pay

more attention to their camouflage, concealment, and deception plans. During the 1944 Normandy campaign, the Germans had to observe, record, and analyze British and American bombing schedules in order to successfully plan for unrestricted daylight manoeuvre on the battlefield. Without its own air power, the Germans were forced to hide when bombers flew overhead, and move as much as possible at night. On the modern battlefield, the new schedule to know is the revisit time of an enemy reconnaissance satellite, which likewise has an effect on the commander's manoeuvre plan.

In order to counter the threat from above, some fundamental doctrinal changes are being made. First, there is the need to accept institutionally that one's forces can be imaged from space. Second, the threat must be properly understood, and countermeasures implemented, at all levels. Countermeasures must also be applied uniformly throughout an entire theatre of operations. Satellites know no front lines. The threat that space-based observation presents has, for example, pushed the United States to continue its trend towards high-speed manoeuvre land warfare and an increasing reliance on lighter forces.¹⁵ Shorter and shorter periods in between revisits from space assets has implied that ground forces must be sufficiently agile to take significant actions during the few days between a satellite fly over. The United States has also given some consideration to the need for denying space-based imagery to an adversary during wartime. Not only does one have to be aware of all the available sources of information one also has to be able to deny access to those sources if necessary. One complicated issue that arose during the 1990-91 Gulf War was the fact that Iraq had uninterrupted access to U.S. weather satellite imagery because the responsible agency feared blacking out the signal would earn serious reprimands from friendly countries also affected. In the future, potentially striking and crippling commercial or neutral military space platforms outside the immediate theatre of operations may have to be considered.

The issue of weather monitoring has always played a paramount role in military operations. The critical impact of weather on the timing of the Normandy invasion is but one example. Weather forecasting literally helps reduce the fog of war by providing an assessment of future field conditions in support of military operation planning. During the Gulf War, Lieutenant General Thomas S. Moorman, then commander of United States Air Force Space Command, noted that, "understanding the vagaries of weather became crucial to air operations", as aircraft weapons loads were optimized for weather conditions over the target.¹⁶ Coalition forces relied on commercial satellite systems to get accurate weather data over Iraq.¹⁷ Since then the USA has developed the Defense Meteorological Satellite Program (DMSP) which provides the collection and dissemination of global visible and infrared cloud cover imagery and other meteorological, oceanographic, and solar-geophysical data for operational forces. For example, weather satellites could help predict the movement of chemical and biological weapons employed on the battlefield, thus giving commanders a vital opportunity to avoid high

casualties through decisive and informed action. Or another example, the commander may choose to attack on a given day knowing that the poor weather conditions will mask his advance. Essentially, the data provided by space-based meteorological systems gives the commander the freedom to exploit weather conditions to his or her advantage.

The advent of accurate three-dimensional space based navigation and mapping has resolved the traditional problems of a commander of knowing where he is and where he is going. The idea of space-based navigation dates back to the 1960's when the United States Navy was searching for ways to provide an accurate guiding system for its Polaris submarine fleet. During the late 1970s the LORAN navigation system was developed; besides being limited to two-dimensional information it suffered from inaccuracy and spotty global coverage. However, navigational satellite constellations have recently evolved to provide more accurate all-weather, day-night, positioning, navigation, timing, and velocity data. Commonly known as the Global Positioning System (GPS), aeroplanes, ships, and soldiers can now know their precise location within a few meters. To the land commander, the ability to manoeuvre using GPS means that forces can be dispersed to reduce the risk of detection and attack, manoeuvre independently, and marry up again at pre-selected points just prior to an attack.¹⁸ With GPS, logistics and rear-echelon support can move more freely as well, decreasing their vulnerability to attack while not having the fear of failing to link up and support the front line elements. GPS allows units to manoeuvre easily in terrain that was traditionally very restrictive to mobility. The Gulf War was a perfect example of this. The Americans, employing GPS, were able to advance huge columns over open desert terrain with little fear of becoming separated or lost. By contrast the Iraqi forces had little or no GPS capability, and so were forced to keep to known routes. This not only restricted Iraqi movement on the battlefields, it also allowed coalition airforces to find and engage them without difficulty, knowing that Iraqi mechanized forces would be concentrated. Reserves and reinforcements had to arrive by the same predictable routes, which gave them little chance of survival against superior American air power. Again, the allies were able to employ Special Forces behind Iraqi lines for several weeks with the aid of GPS for location, targeting, and re-supply. Later in Bosnia-Herzegovina, GPS played a significant role in the recovery of a downed American fighter pilot. Even though navigation by GPS does not mean that forces will never again be lost or dazed on the battlefield, GPS has become central to military mobility, thus minimizing the potential fog of war for all units.¹⁹

A military force can choose to actively or passively engage in the use of space assets as a force multiplier. What it can not choose to do is ignore the existence of space assets altogether. Many states already have space support facilities or are close to deploying them. Nearly as many states have force enhancement capability. Just about any state has limited access to force enhancement products. Warfare has entered a new era, driven by information and enhanced by space assets that provide it. Military forces that do not keep abreast of space developments invite

disaster for themselves on the battlefield. One must keep in mind, however, that space assets alone cannot and do not win wars. They merely add to the resources from which a commander derives his decision. Humans still control the nature of war. Outer space has simply provided another element in which to do it.

For the most part nations are still infants in the use of military space assets, and recent conflicts such as the Falklands, in Afghanistan, and the Gulf War are but an inkling of things to come. With the interminable development of space capabilities, the potential for space assets as a force multiplier in conflict is virtually unlimited.



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Endnotes

1 Author Arthur C. Clarke coined the Gulf War as the first satellite war in an interview with John Burgess, "Satellites' Gaze Provides New Look at War", *Washington Post*, 19 February 1991, p. A13. [\[Return\]](#)

2 Manno, J. *Arming the Heavens: The Hidden Military Agenda for Space, 1945-1995*. (New York, 1984), p.128. [\[Return\]](#)

3 Ibid, p.130. [\[Return\]](#)

4 Johnson, *Soviet Military Strategy in Space*, pp.90-91. The Soviets set a record for consecutive space launches that year that has yet to be broken. [\[Return\]](#)

5 Ibid, p.93. [\[Return\]](#)

6 Gray, *The Influence of Space Power*, p.296. [\[Return\]](#)

7 Hamon, D.R. "Space and Power Projection", *Military Review*, (November 1994), p.62. [\[Return\]](#)

8 For an example see Bruce, James. "Israel's Missile and Space Projects", *JANE's Intelligence Review*, (1995): pp.352-354, and Clark, Phillip. "Third Successful Israeli Satellite Launch", *JANE's Intelligence Review*, (1995): pp.265-266. [\[Return\]](#)

9 For an extensive review on this issue see Yost, David S. "France and the Gulf War of 1990-1991: Political-Military Lessons Learned", *The Journal of Strategic Studies*, 16, 3, (September 1993): pp.339-374. [\[Return\]](#)

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11 USA. ODUSD (Space). *Department of Defense Space Program: Executive Overview for FY 1999-2003*, (February 1998), pp.8-9. [\[Return\]](#)

12 Moorer Jr., Major D. F. "Accepting and Understanding Space Capabilities", *Military Review*, (May/June 1995), p.65. [\[Return\]](#)

13 Since 1994 Brazil, Canada, China, ESA, France, India, Israel, Japan, Russia, and the US had this capability. [\[Return\]](#)

14 Wolf, Capt. J. R. "Implications of Space-Based Observation", *Military Review*, (April 1994), p.81. [\[Return\]](#)

15 Ibid, p.84. [\[Return\]](#)

16 Cited from Keethler, Gregory A. "Impact of the Soviet Union's Demise on the U.S. Military Space Program", Petrie, J. N. Ed. *Essays on Strategy XI*, (Washington, 1994),p. 380. [\[Return\]](#)

17 Hamon, *Space and Power Projection*, p.64. [\[Return\]](#)

18 There is also DGPS _ Deferential Global Positioning System. American GPS satellites have the ability to control the degree of accuracy provided by the existing satellite constellation, so that commercial and civilian users may have position within 25-100 meters, while military forces can obtain an accuracy to within 1-5 meters. Furthermore, encryption methodologies and algorithms are designed into the satellites to block adversarial access to the Y-code on the classified military frequency, forcing potential enemies to use the civilian C/A code on L-1 which can be jammed by US Forces. [\[Return\]](#)

19 For the impact of GPS on the military and civilian market see Stanton, J. "Global Positioning System is An Asset Requiring Protection", *National Defense*, (December 1997), pp.28-29. [\[Return\]](#)

The Art of Leadership

General Jacques A. Dextraze , CC, CBE, CMM, DSO, CD, LLD

The following article is reprinted from a paper written by General Jacques Dextraze in 1973 during the second year of his tenure as Chief of the Defence Staff. Considered by many as the ultimate paper on the art of leadership, it is reproduced here in its entirety. To further appreciate the words written, a brief biography of General Dextraze is presented following the article to introduce our readers to him.

I am addressing this, my second personal message to the Canadian Forces, specifically to those of you who are faced with the great challenge of leadership, namely the group from master corporals to general officers, inclusive.

I have not chosen this subject lightly. To me, leadership is the key to success in military operations, in peace and in war, as it has always been through the centuries. Yet it is a subject that doesn't get the attention it deserves today. My purpose with this letter is to stimulate some thoughts, and to put leadership in the forefront of your minds, where it belongs. I want you to read carefully and seriously what I have to say.

Back in 1959, when I was a colonel and the Commandant of the Royal Canadian School of Infantry at Camp Borden, I talked to a graduating class of young officer cadets on "Leadership and Man Management".

I find it interesting, some fourteen years later, to look back over the words that I presented to those budding young leaders that day. What strikes me most, upon rereading my text, is how little my ideas about leadership have changed over the years. I myself have certainly changed in the interim – in rank, in outlook, even in my basic approach to military life. Likewise, the world around me has changed dramatically in those fourteen years; 1959, after all, was before Vietnam, the hippies, colour TV, the permissive society, widespread drug abuse, "wars of liberation", man in space, unification, and all those things and events that have characterized the recent era as the period of "future shock". And yet, when it comes to the basic principles of leadership which I talked about in 1959, it is remarkably clear to me that, "plus ça change, plus c'est la même chose" – "the more things change, the more they stay the same".

"Leadership is the art of influencing others to do willingly what is required in order to achieve an aim or goal."

Another thing that surprises me in retrospect is the fact that my remarks on leadership, which were directed to a group of brand new infantry officers and which were presented very much in the context of the imminent employment of these young officers as platoon commanders, are pretty well appropriate in a much wider sense. For example, an air

element master corporal who is responsible for the repair of an aircraft could very well apply the principles evoked on that occasion, as could, say, an admiral in command of a flotilla of our ships.

The point that I want to make is that the basic principles of leadership and man management are both timeless and universal.

What I would like to do, then, is to talk about a few very straightforward rules that have helped me immensely during my career and which I commend to you in the hope that they will, at the very least, stimulate some thoughts in your minds about such matters.

In doing so I don't lay claim to their originality because that, after all, would be a contradiction of the point I just made about their timelessness. These basic rules have been around since man first learned that working together was the key to success in battle and in his more peaceful pursuits. My only presumption is that my personal experience, covering as it does a lengthy span of years and the whole spectrum of military ranks, in conditions of war and peace, has given me a rare opportunity to see for myself how true these basic principles of leadership are, and how helpful they can be in solving the difficult problems that face all who must lead other men.

Before getting down to specific principles, I would like to dwell for a moment on leadership in general.

First of all, let me give you my definition of leadership. There are as many definitions as there are writers on the subject, but I have always favoured one that seems to capture the essence of it in very simple terms:

"LEADERSHIP is the art of influencing others to do willingly what is required in order to achieve an aim or goal."

Leadership, then, is an art, rather than a science. I am convinced, however, that many of the problems faced by managers today, at all levels, stem from the fact that the art of leadership seems to be dying, and it is being replaced by mechanical processes of control that seem to make little distinction between the men and the machines that make up the system. Modern managerial techniques, introduced in the name of efficiency and economy, often tend to dehumanize the organization and its individuals. Because machines obey instructions consistently and without complaint, modern managers are inclined to assume that people should respond in the same way. They don't, of course. They have capacities, strengths and breaking points that vary from individual to individual and from situation to situation. Unlike machines, many people work best under stress. Unlike computers, their performance is influenced for better or worse by a wide range of human emotions that reflect, in large measure, the quality of leadership that is being exercised. Because a leader is working with that infinitely complex entity called a human being, he must be an artist, not a mechanic.

As in all art forms, simplicity is to be preferred to complexity. You will

see that the leadership principles I discuss below are all very simple, reflecting as they do some basic characteristics of human nature. It is not surprising to me that one of the symptoms of the process that degrades leadership from an art to a mechanical process is the increasing use of complicated language, with a lot of technical terms whose purpose often seems to be to impress rather than to describe. We talk of "rationale" rather than "reason", "utilize" rather than "use", "personnel inventory" rather than "people"; the list is endless. The language for a good leader is simple and direct, leaving little room for error. Big words don't impress me, and they won't likely impress your subordinates.

So much for introductory remarks. What I want to do now is discuss briefly the various qualities and principles that bring about good leadership in a military person.

I believe that there are four qualities that are essential ingredients of successful leadership. These are:

- LOYALTY
- KNOWLEDGE
- INTEGRITY
- COURAGE

"I believe that there are four qualities that are essential ingredients of successful leadership . . . Loyalty, Knowledge, Integrity and Courage."

Loyalty

To be a great leader, you must display two forms of loyalty. You must first of all be loyal in an upward direction, to your superiors and through them to your government and country. At the same time, however, you must be loyal to your subordinates. It is not always easy to reconcile these two forms of loyalty. You will sometimes have great difficulty in keeping a proper balance between the two in the face of conflicting demands. This seems especially true today, in this era of changing moral standards when, for example, some individuals feel compelled to steal and publish classified documents in the name of loyalty. But it isn't a new problem. Any commander who has ever ordered troops into battle must certainly have paused to reflect, or should have, on the need to risk lives for a higher cause. And which of you, at some time or another, hasn't yielded to the temptation to commiserate with your subordinates over those "clots from Headquarters"?

I can offer you one fundamental rule to guide in this dilemma of conflicting loyalties.

Where loyalty to superiors and subordinates cannot both be simultaneously satisfied, then loyalty upward must prevail, because in the final analysis it is loyalty to our country that really counts.

One more word regarding loyalty. Loyalty demands that you forsake personal pleasures if they conflict in any way with the performance of your duties. You have no right to take time off for amusement tonight if you should use this time to prepare for tomorrow's task.

Knowledge

You must possess knowledge if you are to be efficient. If you have knowledge you will command respect not only from your subordinates but from your superiors as well. You must never stop learning and you must never pretend to anyone that you know something when in fact you do not. On the contrary, it is best to admit your ignorance of a certain point under discussion and encourage whoever is speaking to you to clarify the particular subject further. In so doing you will be learning something new, while at the same time revealing that you are honest. In the long run, there is no substitute for knowledge.

As you progress in rank, there will be a tendency to neglect your own self-education. This tendency will come naturally, since with higher rank you will have more privileges and more assistants to do things for you. Do not let these circumstances lull you into a state of laziness that is characterized by such attitudes as: "I am far too busy to deal with these details", or "Why should I bark when I have dogs that can bark for me", or "I cannot let myself get emotionally involved in this matter", and so on. Instead, remember that to lead you must know what you are talking about, and to gain the necessary knowledge you must study a given problem with every means at hand.

Too many people believe that it is old-fashioned to set aside time to study like a student at school. This is wrong, because military leadership without knowledge never has been and never will be truly successful. History is full of examples of how battles and wars can be lost through lack of professional knowledge. Look how often large, well-equipped armies have been trashed by smaller forces. Sound, knowledgeable leadership makes the difference, and the necessary knowledge can only come through hard work. Do not be under the impression that, as your career progresses, the piece of grey matter in your head will grow in size proportionate to the loftiness of your rank. This just doesn't happen. You may be given more authority by promotion, but you are not by the same act given additional knowledge or ability. These you must acquire yourself through study, application and experience.

You should also be acutely aware of the rapid pace at which man's total fund of knowledge is increasing these days. This is just as true of the military art as it is of the sciences in general. Things are happening so fast on the military scene in the nineteen-seventies that no one who claims to be a leader can sit back and hope to operate effectively with what is probably obsolescent knowledge. Formal education alone is not good enough. Self-education is the answer.

Integrity

Integrity means the refusal to deceive others in any way, no matter what the circumstances. As a leader, you must take decisions and accept their results. You are the one responsible for the success or failure of your own actions. You must admit your mistakes at least to yourself, and profit by them. You must not try to bluff your way through or shake your responsibility off onto others. One sure way to undermine your effectiveness as a leader is to play games with people. Take it from me, it doesn't work. It may give you some advantage in the short term, but it is bound to hurt you in the long run.

Courage

I would define true courage in battle as the desire, or at least the willingness, to face danger in the knowledge that it exists. I have heard people refer to a courageous man as a man without fear. This, to me, is a contradiction. I believe, rather, that courage is a quality of the mind which makes one refuse to be swayed from his aim by danger or difficulty. To me it is a quality that enables a man to marshal all his abilities and powers to overcome the hardships standing in his path. I am positive that perseverance is the heart of courage. To sum up what I have said, I believe that the courageous man is one who has succeeded in mastering his emotions and weaknesses.

We are more conscious of courage in wartime than in peacetime, because in war there are naturally more opportunities to display courage, and because bravery in action is often spectacular. It is sometimes forgotten, however, that courage of a different sort may be called for in peacetime, and that this "quiet" courage is no less important than the battlefield kind. We have not been actively engaged in combat now for a long time, yet all of us in positions of responsibility are faced with making decisions that may call for a large measure of moral courage. Too often in peacetime it takes courage to "rock the boat", and I must admit that our peacetime system sometimes seems to have a built-in bias against those who have the courage to speak out against what they honestly believe to be wrong. Perhaps this is the root cause of a malaise that is common today throughout our society, but whose impact we feel especially keenly in the armed forces. I am talking about indecision. It is my belief that indecision in the face of a difficult problem reflects a lack of courage. It is the easy way out, but it is usually wrong.

I could mention many other qualities that are essential to good leadership, but in my opinion those I have discussed above are the vital ones. All of the other useful qualities, I think, can be distilled down to these four. If you are loyal and knowledgeable, and have integrity and courage you have what it takes to be a good leader in the Canadian Forces at any rank level.

And now some general remarks on my philosophy of leadership.

The job of leading demands that you acknowledge good work and be critical of bad work on the part of your subordinates. How you do this can

have an important bearing on your effectiveness as a leader. The key here is moderation. Excessive praise and excessive rebuke are each detrimental in their own way. I am not saying that rewards or punishment are to be avoided; I simply mean that they must be metered out fairly and intelligently. One thing that annoys me particularly is the current trend in the Forces to heap praise upon people who are simply doing the good job that is expected of them. The danger is obvious (as it is in the opposite case of overpunishment). It's like fighting a battle; if you commit all your resources to a routine action there's nothing left for the unforeseen. You must keep something in reserve, and this is no less true when it comes to awarding praise or punishment.

Leadership is self-perpetuating _ at least it should be. This means that you, as a leader, have a solemn responsibility to develop leadership ability in your subordinates. Remember that all of them sooner or later will have to lead others. The best way for you to teach them, of course, is by example, hopefully good example.

In the Canadian Forces today there are two areas of weakness in respect to leadership development, namely in the junior non-commissioned ranks and in the junior officer ranks. One of my goals as CDS is to correct this situation through formal leadership training and professional education programs, but these alone will not be enough. There must also be "on-the-job" leadership training and this is the responsibility of individual supervisors, especially at the sergeant and major levels. These people must do all they can to pass on their expertise to aspiring subordinates, through delegation of authority, personal counselling, etc. The future excellence of our Service, after all, depends very much on the leadership potential of today's corporals and captains.

I have listed below some of the basic rules of leadership that I have found useful in my career, and which I commend to you. The list is not all-inclusive, and it is random, but when considered together with the four principles mentioned earlier it summarizes my approach to good leadership.

Finally, I want to make one thing clear. Although I have pointed out a number of qualities and rules that are, as I said earlier, timeless and universal, I don't want to imply that there is a single stereotype for the Perfect Leader, or that there is only one approach to leadership. If this were so, life would be pretty unbearable. (Imagine, for example an armed force made up of 83,000 JADEX'S!)

On the contrary, within the bounds imposed by the few general rules I have touched on, there is an infinite range of possible personalities that are compatible with good leadership, varying from hard-nosed sons-of-guns to soft-spoken methodical persons who exude quiet confidence. It is no contradiction that generals like Patton and Bradley, Guderian and Rommel, or Montgomery and Alexander, work well together. In fact it may be true that differing leadership styles are complementary, and therefore equally essential within a military organization.

The important thing is that you adopt a leadership style that matches your own innate personality. Don't become artificial in an attempt to copy a style that doesn't suit you. Be yourself, and conduct yourself according to the guidelines given here, and you will find that leadership comes naturally. But you must work at it.

- Good Luck -

J. A. Dextraze

General

Chief of the Defence Staff

Rules of Leadership

- Don't coax subordinates into obeying your orders. On the other hand, do not club them into it.
- Don't flatter your subordinates. It is unnecessary and tends to degrade you in their eyes.
- Don't be sarcastic toward subordinates.
- Display confidence and pride in those under your command.
- Always support your superiors, and make it clear to your subordinates that you do.
- Accept full responsibility in the eyes of your superiors for the mistakes and failures of your subordinates. If they fail, it is your fault, and your job to make whatever corrections are necessary. Don't try to shift the blame downward.
- Never end an order with a threat. Your rank carries with it all the power, explicit or implicit, that you need.
- If a reprimand becomes necessary, administer it privately unless there is some compelling reason to do it publicly.
- Always be concerned for the well-being of your subordinates, and let them know that you are.
- Never take things for granted. Check and double-check.
- Don't abuse the privileges of your rank. Be austere in the granting and accepting of privileges.
- Work hard and don't waste time.
- Be meticulous and correct about your conduct, bearing, dress and personal relationships.

- Recognize that leadership and popularity are not synonymous.

General Jacques Alfred Dextraze was born on 15 August 1919 in Montreal. He enrolled as a soldier in Les Fusiliers Mont-Royal in 1939 and enlisted in the Canadian Active Service Force in 1940. He was commissioned in 1942 prior to going overseas. By 1944, he was a company commander, and led his company in Normandy where he won the Distinguished Service Order (DSO). In December 1944, General Dextraze was appointed Commanding Officer of Les Fusiliers Mont-Royal, a position he held until 1945. He received a Bar to the DSO for his services as commanding officer. He then volunteered for the Canadian Army Pacific Force, slated for the invasion of Japan, and was appointed the Commanding Officer of The Hastings and Prince Edward Regiment. Following demobilization, General Dextraze returned to civilian life until 1950, when he was asked by the Minister of National Defence to take command of the Second Battalion Royal 22e Régiment for service in Korea. General Dextraze decided to remain in the army following the Korean Conflict. From 1957 to 1960, he was Commandant of the Royal Canadian School of Infantry and then became the commander of Camp Valcartier. Promoted to brigadier in 1962, he was appointed Commander Eastern Quebec Area (one of two areas in Quebec Command) and in 1963 became the Chief of Staff of the United Nations headquarters in the Congo (the mission was called Opérations des Nations Unies au Congo - ONUC). During this mission, General Dextraze demonstrated great bravery during an operation that successfully rescued a number of missionaries, teachers and students from rebel forces. For these actions, General Dextraze became the only Canadian to receive the Commander of the Most Excellent Order of the British Empire (Military Division) with oak leaves for gallantry. From 1964 to 1966 he was the Commander 2 Canadian Infantry Brigade Group, followed by two tours at FMC Headquarters first as the Chief of Staff Operations and then as Deputy Commander. From 1970 to 1972, he was Chief of Personnel at National Defence Headquarters. In 1972 he was promoted to general and appointed Chief of the Defence Staff until 1977, when he retired from the Canadian Forces. General Dextraze remained active in civilian life and was Chairman of the Canadian National Railway from 1977 to 1982 and was involved in several military, sport and other organizations. He died on 9 May 1993 and is buried at the Côte des Neiges Cemetery in Montréal.



The Military Ethos

In the Canadian Forces the concept of unlimited liability is inextricably linked to, and at the same time sustained by, a shared set of beliefs, values, and a moral code commonly known as the military ethos. While no single document can fully articulate this ethos, it is nonetheless implicit in the very nature of the profession of arms and in the demands and expectations it makes upon military members. Hence, the military

ethos forms the basis of all aspects of service in the Canadian Forces, setting forth the principles and ideals which men and women of the Canadian Forces must subscribe to, both collectively and as individuals. Its fundamental values are integrity, courage, loyalty, selflessness, and self-discipline. This ethos further requires dedication to country, the honouring of Canadian values, and commitment to professional excellence.

The army's expression of the military ethos is anchored on four precepts which are incumbent on every soldier at every rank level. These are:

<i>Duty</i> Duty is manifested in responsibility and devotion to Canada; loyalty to superiors, peers and subordinates alike; courage, resolve and competence in the execution of tasks; pursuit of professional knowledge and self development; use of initiative; application of judgement, intellect and decisiveness; and sub-ordination of self to mission at all times. Duty for leaders additionally entails being aware of and tending to the needs of subordinates.	<i>Integrity</i> Integrity is ensuring that one's personal standards are consistent with professional values, and being committed to act in accordance with these values. Hence, it consists of ethical, principled behaviour; transparency in actions; speaking and acting with honesty and candour; the pursuit of truth regardless of consequences; a passionate dedication to fairness and justice; possessing moral courage; and most importantly, always doing what is right.	<i>Discipline</i> Discipline is first and foremost self-discipline. It is a state of mind which instils self-control and, in battle, helps fortify individuals against the corroding influence of fear. It encompasses immediate obedience to lawful orders and directives; a high standard of personal conduct and deportment; and the display of fortitude, endurance and resiliency in the face of adversity. Discipline is essential to success in operations and is therefore demanded of both the individual soldier and the group under all conditions and circumstances.	<i>Honour</i> Honour lies in being loyal to unit and faithful to comrades; granting quarter to an opponent and respecting fully the law of armed conflict, including treating surrendered enemy and non-combatants humanely and protecting them from harm; adhering to professional values and upholding the traditions of the service; and displaying gallantry, courtesy, dignity, and chivalry in one's everyday actions and conduct.
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The Project of Conquering this Province is Premature¹

Battle of The Châteauguay, 26 October 1813

Captain John R. Grodzinski, CD

To most of the world, the War of 1812 is unknown. Fought at the height of the Napoleonic Wars, Great Britain and the United States found themselves in a war neither really wanted. It was a peculiar conflict where certain portions of the Canadas and the United States were devastated by the destruction of buildings and crops, while in other areas there was little evidence of any conflict. The peace brought about by the Treaty of Ghent was a return to the *status quo ante bellum*, albeit Indian aspirations for a separate territory were destroyed.² Since then, the war has gained a unique legacy. "...Americans think of it primarily as a naval war in which the pride of the Mistress of the Seas was humbled...Canadians think of it equally pridefully as a war of defence in which their brave fathers, side by side, turned back the massed might of the United States and saved the country from conquest. And the English are the happiest of all, because they don't even know it happened".³ Armchair strategists have fought unending debates over who won. One amateur historian synthesized the legacy of the war as the best of all wars, since everyone won!

Jocularity aside, the War of 1812 marked the last attempt to determine North American hegemony through military means. As the war progressed, neither side gained a significant military advantage over the other, a factor precipitating the commencement of talks in March 1813. The peace of 1814 reinforced the outcome of the struggles that commenced in 1755 and ended in 1783 - two powers, the British and the Americans, would coexist on the continent.⁴ The War of 1812 is therefore a watershed in our history, providing the strategic conditions for the social and political development of Canada.

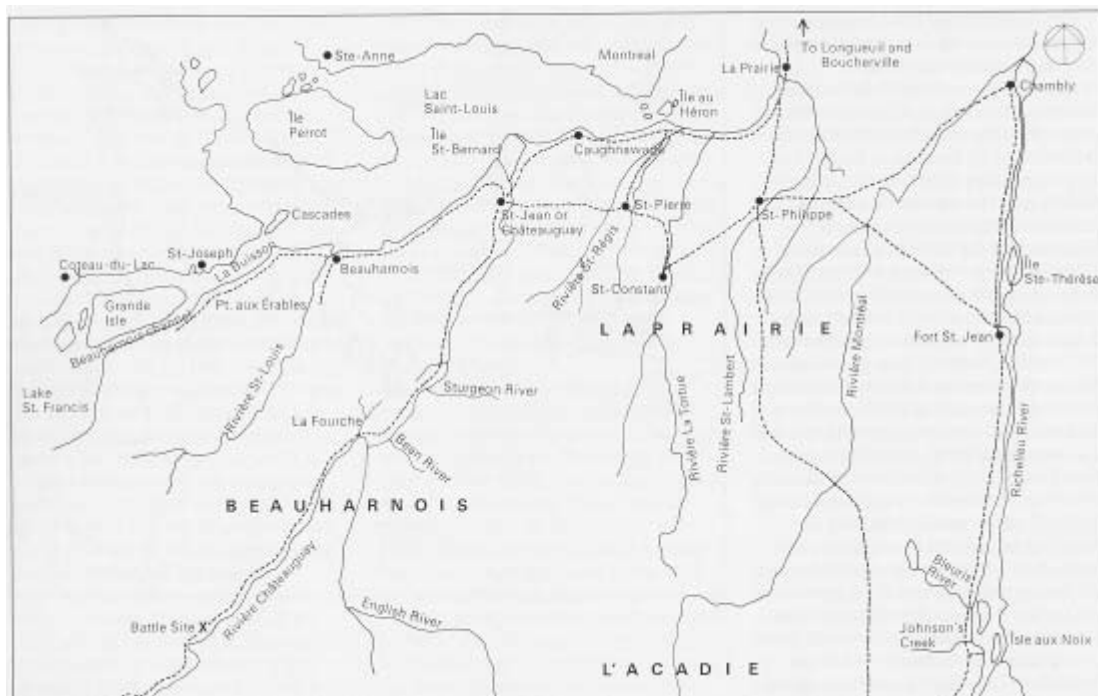




Figure 1. Lower Canada Theatre of Operations 1813. (Courtesy Parks Canada)

The war was fought in the main between British and American soldiers. Credit for the defence of Canada⁵ lies with British regular troops and their Indian allies.⁶ Canadians played an important part, but the institution created for defence, the Canadian militia, had only a minor role. Known as the "sedentary" militia, this force included all able bodied males between 16 and 60 who mustered at least once annually. Given their limited equipment and rudimentary training, they were not much of a military force. As war became more likely, the British, already heavily committed in the Spanish Peninsula, augmented their meagre garrison with a number of line, fencible, and provincial⁷ corps raised in Canada but placed on the British establishment.⁸ The one exception was a unit raised in Lower Canada. The Provincial Corps of Light Infantry (Canadian Voltigeurs), better known as the Canadian Voltigeurs, was formed in early 1812. Raised under the Militia Act of Lower Canada and paid for by that province, the Voltigeurs were essentially a "regular" Canadian unit.⁹ Other "volunteers" joined embodied or in-incorporated militia units.¹⁰ Once hostilities commenced, several militia regiments were also called up at various times and participated in a number of battles and engagements.

The "British" troops in most battles included British regulars, Indians and Canadians in various proportions. In only one case did an exclusively Canadian force fight against their foe. This was at the battle of Châteauguay. Described by some historians as a skirmish¹¹ or dismissed by others,¹² the Canadian victory at Châteauguay brought the defeat of American plans to conquer Lower Canada in 1813. The aim of this paper is to provide an overview of this uniquely Canadian victory from the War of 1812 and the relevance it had with today's combat functions.

When war was declared by the Americans in June 1812, they were militarily unprepared and politically divided. A series of significant defeats in the first year of the war did little to help. The British took Detroit and Michilimackinac and won at Queenston Heights. The Americans then lost the chance of an Indian alliance following an attack on the St Régis reservation. An attempt to take Montreal was defeated at Lacolle.¹³

The Americans used the early months of 1813 to improve their army and enhance their naval presence on the Great Lakes. Their strategy lay in conquering Upper Canada, initially on the Niagara Frontier. The strategic centre of Canada, Montreal, was momentarily ignored, as was the important British base at Kingston. Once control of Lake Erie was achieved, the focus would shift to the Erie Frontier.¹⁴ Immediately, things went wrong. January was marked by disaster when three American regiments were destroyed at Frenchtown, followed by another disaster near Fort Meigs. Naval power turned the tables. In April an American amphibious operation was conducted against York (now Toronto). The town was pillaged and the public buildings burned. In May, the British tried to destroy the American base at

Sackett's Harbour on Lake Ontario, but failed. That same month, the Americans attacked Fort George on the Niagara Peninsula and forced the British to withdraw to Burlington Bay. The Americans were then forced to withdraw following their defeat during a night engagement at Stoney Creek in June. A raid was prepared against Beaver Dams, but the American plans¹⁵ were discovered and they were defeated by the Iroquois. On September 10, a British squadron was defeated at Put-in-Bay and control of Lake Erie transferred to the Americans. This immediately threatened the lines of communications of the British forces around Detroit. The local commander of the British forces, General Proctor, began a withdrawal first into Lower Canada and then along the Thames River. The pursuing Americans caught up to him at Moraviantown (near modern London, Ontario) on October 5, where Proctor suffered heavy losses.¹⁶

The reaction by Sir George Prevost, the Commander-in-Chief, was to order the abandonment of all of Upper Canada west of Kingston. However cooler heads prevailed and this was changed to a withdrawal from the Niagara Peninsula only.¹⁷ Several fierce engagements occurred along the frontier, and several towns were put to the torch.

Meanwhile the Americans had been developing plans for a campaign against Montreal or Kingston. The newly appointed Secretary of War John Armstrong clearly saw the importance of the St Lawrence River valley. In July 1813, he ordered the assembly of a force at Sackett's Harbour in preparation to an attack on Kingston. A secondary attack against Montreal would be made up the Champlain Valley as an alternate objective.¹⁸ Montreal dominated the water routes to the Great Lakes and covered the approaches to Quebec; it was the strategic centre of the Canadas, whereas Kingston was the key naval centre on Lake Ontario. The choice of where to attack was left to Major-General James Wilkinson, commander of the forces at Sackett's Harbour. During a council of war, the views presented by the American naval commander on Lake Ontario, Commodore Chauncey, swayed the decision. Understanding the risk of putting Chauncey's ships against those of Commodore Yeo at Kingston,¹⁹ the council agreed that Montreal should be the objective. Wilkinson's force at Sackett's Harbour would feint towards Kingston (which would be blockaded by Chauncey) and then proceed down the St Lawrence and link-up with Major-General Wade Hampton's army advancing north from the Lake Champlain area. The united armies would then take Montreal.

Wilkinson's army numbered some 7000 soldiers, while Hampton's force at Plattsburg included 5,520 infantry, 180 cavalry, a battery of eight 6 pounder guns, one 12 pounder and one howitzer. This latter force was largely composed of American regulars. Plans for the attack continued into the fall and were delayed when Wilkinson became sick. Illness also affected the command structure. The relationship between the two generals was less than amicable. Although Hampton was under Wilkinson's orders, they despised each other intensely,²⁰ which would have implications on the upcoming campaign.



On 20 September, Hampton crossed the international boundary and moved on Odelltown in Lower Canada. Figure 2. Lieutenant-Colonel Charles Michel d'Irumberry de Salaberry. (Courtesy National Archives of Canada)



Figure 3. A fanciful depiction of the battle of the Châteauguay, depicting the moment when de Salaberry (standing centre) ordered his men to fire on Purdy's troops on the opposite bank of the river.

Before him lay numerous roadblocks and abatis left from the previous year and a few Indians and soldiers belonging to the Frontier Light Infantry. They harassed Hampton and were soon joined by reinforcements, which included a detachment of Voltigeurs under Lieutenant-Colonel Charles-Michel d'Irumberry de Salaberry, on whom, more will follow. Faced with the presence of the Indians and militia, fearful of a shortage of water and wary of the garrison at Île aux Noix, Hampton decided to withdraw and try another route. He swung west and proceeded at a leisurely pace to Four Corners. His pace was partly set by Wilkinson who wrote that his own advance was delayed and Hampton should wait for him to move. Hampton used the 26 day stay at Four Corners to improve the road back to Plattsburg, bring up additional artillery and supplies and to train his soldiers. Reports reaching the Canadians stated that the Americans were suffering from sickness and were short of adequate clothing.²¹

To the north, Lieutenant General Sir George Prevost learned of the American threat and had moved from Kingston to Montreal to commence preparations. He determined that the security of Montreal "depends on our being able to maintain an impenetrable line on the South Shore...".²² There were few regular troops available and Prevost held the militia, some 60,000 strong, in little regard. The "impenetrable line" was divided into two parts: a *reserve division* under Major-General Sir Roger Shaeffe and an *advanced division* under Major General Stovin. The reserve division was "to occupy La Prairie on the St Lawrence, extending through St Pierre, St Phillippe, L'Acadie to St John (modern Saint Jean) on the Richeleau, and to consist of a Car Brigade,²³ a squadron of the 19th Light Dragoons, the Company of Guides, the Flank Battalion²⁴ of the Line detachments of the 103rd Regiment, four companies 3rd Battalion Sedentary Militia of Longeuil, Boucherville and Vercheres. The next post of St John (Saint Jean) and Île Aux Noix is to be garrisoned by the battalion companies²⁵ of the 13th Regiment, one company of the 10th Royal Veteran Battalion

and the 4th Battalion Embodied Militia". "The advance is ... to occupy Châteauguay extending through the settlements of Sherrington and Hammingford to the mouth of the Lacolle on the right and to consist of the following corps: two 3 pounder guns, one troop of 19th Light Dragoons, Captain Watson's Troop, Canadian Light Infantry, Canadian Voltigeurs, Canadian Battalion of Light Infantry, 1st Battalion Embodied Militia, 2nd Battalion Embodied Militia, the Chasseurs and Sedentary Militia of Beauharnois, Châteauguay and the 1st and 4th Battalions of the Townships..."²⁶ The Advance also included four companies of the Régiment de Meuron, a Swiss regiment on the British establishment.²⁷ A provisional battalion was formed from Montreal militia for the defence of that city.

In early October, preparations intensified. Montreal area troops were instructed to have two days provisions in their packs. The militia was ordered to carry 40 rounds at all times as well as provisions. Earthworks were prepared and roads improved. Further units were called up. A great deal of movement also occurred.

The appearance of Hampton on the upper Châteauguay caused the defence to shift there in mid-October. On October 17, Major-General De Watteville replaced Stovin as the army commander of the Advance. Responsibility for the defences of the Châteauguay River and its watershed fell to Lieutenant-Colonel de Salaberry. Charles Michel d'Irumberry de Salaberry was the son of a Canadian *seigneur* who had served in the British and in the provincial Legislative Council. All three of Charles' brothers entered the army, all of whom died during service in India or Spain.²⁸ Charles joined the 60th (Royal American) Regiment of Foot in April 1793, and served in the West Indies, the Walcheren expedition of 1795, Ireland and in Canada.²⁹ In the spring of 1812, he raised the Provincial Corps of Light Infantry, better known as the Canadian Voltigeurs.

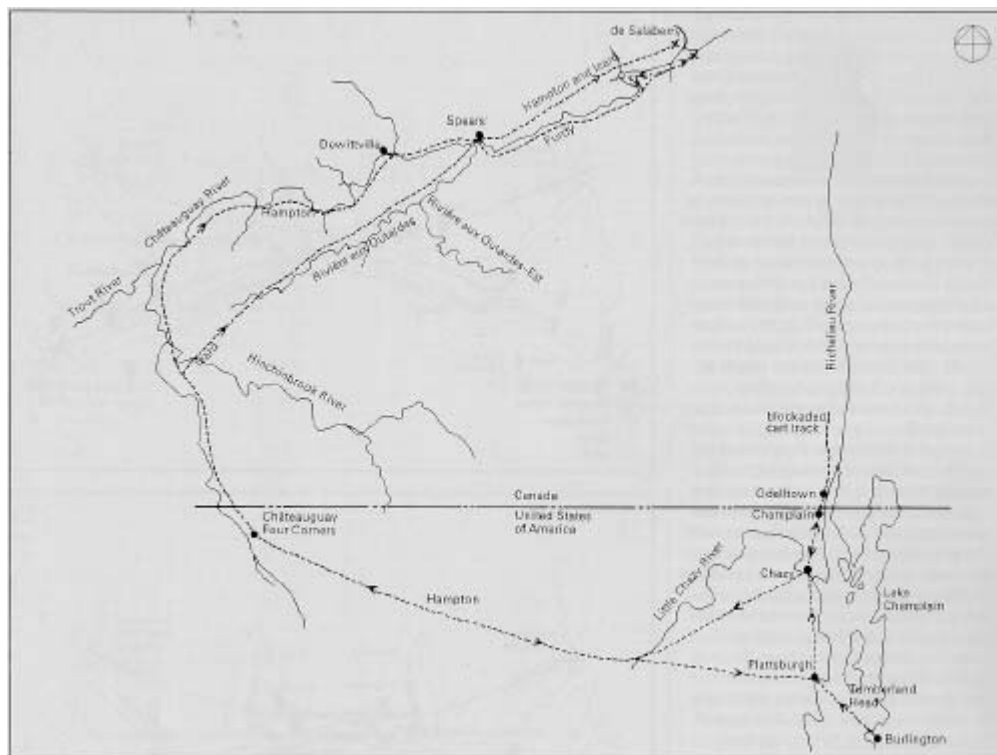


Figure 4. Principal American Moves in October 1813.
(Courtesy Parks Canada)

De Salaberry's scouts had established contact with the Americans at Odelltown and provided regular reports of their movements. Learning of the halt at Four Corners, de Salaberry decided to attack Hampton's camp. Taking two companies of Voltigeurs, the Light Company of the Canadian Fencibles (Ferguson's company) and approximately 100 Indians, de Salaberry arrived at Four Corners on 1 October. Surprise was lost by the accidental discharge of a musket and de Salaberry with one company of the Voltigeurs and some Indians rushed the camp. The Americans responded quickly, forcing de Salaberry to flee, although skirmishing continued until dusk. De Salaberry then considered his options. Hampton could move west to the St Lawrence or north to Montreal. Taking note of some ground near Allan's Corners, de Salaberry surmised that if the Americans moved on Montreal, this is where the Canadians would make their stand.³⁰

On October 18, Hampton received a letter from Wilkinson (dated 16 October) stating that the feint towards Kingston was cancelled and that he was moving down the St Lawrence. Hampton was to "proceed to the mouth of the Châteauguay or other point which shall favour our junction and hold the enemy in check"³¹ Hampton commenced his move on 21 October, leaving behind 1500 militia who refused to cross the frontier. Four days later, as he neared the lead British positions, Hampton divided his force in two. One column, under Hampton, would cross to the south bank of the river, outflank the British position and recross the river in the British rear. The main column would proceed along the north bank and push aside the militia. Commanding this column was Brigadier General Izard. On 21 October, Izard's men attacked a picket consisting of local sedentary militia and 10 Indians at Spears'.³² Hampton and the remaining troops arrived there on the 22 October.

The arrival of the Americans at Spears' was reported to de Salaberry by Major Henry of the Beauharnois Militia.³³ Reports were also sent to de Watteville, who ordered more troops to join de Salaberry. Henry ordered the flank companies of the 5th Battalion Select Embodied Militia and 200 members of the Beauharnois Militia to proceed six miles up the road to a spot near the site selected earlier by de Salaberry. The next morning de Salaberry arrived with two companies of Voltigeurs and Ferguson's Light Company of the Canadian Fencibles, and the whole body then marched to the position de Salaberry had picked.

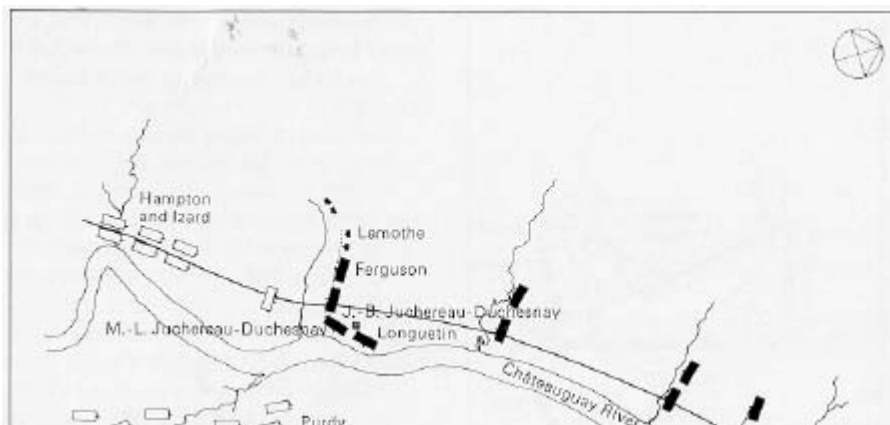




Figure 5. The battlefield at 1100hrs, 26 October 1813.
(Courtesy Parks Canada)

Here the wood thickened, creating a funnel that limited movement to the road, which ran close to the river. On the opposite side was a marshy thicket. The wood abounded with deep ditches and four successive lines of defence with barricades and abatis were constructed. The ground to the front was cleared to improve the fields of fire. A small blockhouse was constructed to the rear of the abatis offering a long view of the river. The final line commanded a ford across the Châteauguay where a lunette³⁴ was constructed on the far side to protect the left flank. De Salaberry placed his men behind the barricade and the Indians in the swampy wood to the north. Two pickets were also placed forward of the abatis to provide early warning and to protect a party of 20 Voltigeurs working on the abatis. The pickets were under Lieutenants Guy and Johnson.

De Watteville established a final line of defence two or three miles to the rear, at Baker's in the vicinity of La Fourche. This position included further defensive works and the artillery.

Early on the 25 October, American light infantry reconnoitred the Canadian position. The forward works were offered a hard fight and the swamp was impassable. Hampton's plan was to make a strong frontal assault supported by a flanking movement south of the river. Fifteen hundred men, belonging to three regular regiments³⁵ and some militia, under Colonel Robert Purdy were ordered to cross the river and prepare to attack the Canadian flank on the following day. Purdy's force set off into the dark where "during the night we were repeatedly misled by our guides, who knew nothing of the country...they led us into a thick cedar growth or swamp on the banks of the river and immediately opposite the enemy's position, and knew not how to extricate us. Incredible as it may appear, General Hampton entrusted nearly half of his army, actually his best troops, to the guidance of men, each of whom repeatedly assured him that they were not acquainted with the country and were not competent to direct such an expedition".³⁶

Hampton's resolve was shaken that night. Instructions arrived to prepare winter quarters for 10,000 men and he questioned the seriousness with which the campaign was being pursued.³⁷



The defenders were reinforced by the 1st Battalion, Militia Light Infantry Battalion³⁸ commanded by Lieutenant-Colonel



Figure 6. The battlefield 1400hrs, 26 October 1813.
(Courtesy Parks Canada)

George Macdonell. Earlier, on 21 October, the battalion commenced an incredible 60 hour journey by *bateaux* and foot to de Salaberry's position. Upon arrival, Macdonell's exhausted men rested near the ford and later constructed the breastworks there.

Macdonell was given command of the last line in de Salaberry's position.

Early on 26 October, Hampton ordered Izard to form his infantry and dragoons into column and advance towards the abatis. Hampton hoped his movement would be joined by the sound of musket fire from Purdy's flank attack. This would be the signal for Izard press on with his attack.

At approximately 1000 hours, Izard's lead party came into view of Guy's picket. Several shots were exchanged as the picket moved back to the abatis. Hearing the reports, de Salaberry moved forward with Captain George Ferguson's Light Company of the Canadian Fencibles, two companies of Voltigeurs under Captains Jean-Baptiste and Michel-Louis Juchereau-Duchesnay, 22 Indians under Captain J-M Lamothe³⁹, and a company of the 2nd Battalion, Sedentary Battalion of Beauharnois.

De Salaberry arrived at the abatis to find both Guy and Johnson directing the defence. Hampton did not appear to be pressing the attack. While the picket was being engaged, nothing appeared to be happening on the south bank. Uncertain as to Purdy's situation, Hampton ordered Izard to halt. Firing at the abatis quickly petered out.

Using intelligence on the enemy from Guy and Johnson, de Salaberry posted his companies. Lamothe and his Indians were ordered into the thick bush on the right, where their whoops and presence might deter the Indian-wary enemy from moving around the right flank. Four companies were posted along the abatis and the river. On the right of the abatis was Ferguson's Fencibles, next to him and extending to the Châteauguay River, was Jean-Baptiste Juchereau-Duchesnay's Voltigeur company. Along the bank was Michel-Louis Juchereau-Duchesnay's Voltigeur company; to his left was Longuetin's militia. These two companies were sited to fire into the flank of Purdy's column. Macdonell, commanding the reserve, also received word of Purdy's movements. He ordered the left flank company of the 3rd Battalion Select Embodied Militia under Captain Charles Daly and the left flank company of the 1st Battalion Select Embodied Militia under Captain G.G. Tannacour, to support Brugière who was already posted on the far side of the ford.

Shortly after these dispositions were made, Brugière's troops were fired upon by the two companies of Purdy's advance party. Following a quick fire-fight, the advance party withdrew, falling upon Purdy's disorganized force floundering through the swampy gully. Daly and Brugière were ordered to pursue the Americans, while de

Tonnancour remained in reserve near the ford. Meanwhile, Hampton had not moved, awaiting conditions along the river to favour his attack. Based on reports from the forward companies and the sharp resistance given by Daly and Brugière, Purdy abandoned any further movement downriver and halted. It was approximately 1100 hours. Purdy then notified Hampton of his dilemma.

At approximately 1400 hours, Purdy received an order from one of Hampton's staff officers to retire four miles upriver. Now it was Purdy's turn to be confused by an order. Wondering why he had been ordered on this flank march in the first place, Purdy had little time to think when "the enemy made a furious attack on the column by a great discharge of musketry, accompanied by the yells of the savages".⁴⁰ Both Daly and Brugière had caught up to Purdy and attacked his force.

During the three hours following Purdy's initial reverse, Hampton did little. He allowed Izard's men (less the forward troops) to build fires and prepare their meals, but made no move against de Salaberry's main position. Finally, at 1400 hours, perhaps due to the sound of musketry from Purdy's position, he ordered Izard to advance.

As the Americans approached the abatis, de Salaberry seized the initiative. Once a large American column was visible, he fired a single shot that brought down a mounted American officer. Canadian bugles then sounded the "commence fire". Izard responded by moving his companies into line from the left and then delivered well-disciplined volleys. Since the abatis was curved, Izard adjusted his line, placing the weight of his fire on the Canadian right. Sensing that victory was imminent, the American infantry shouted. De Salaberry, sensing this was a critical moment ordered his men to yell. Their loud calls were joined by whoops from the Indians. De Salaberry also ordered "the bugles to be sounded in all directions, so as to induce the enemy to believe that we were in far greater numbers".⁴¹ Two reserve companies were sent to the abatis by Macdonell.

This *ruse de guerre* succeeded. Convinced that they faced a greater opponent, the American fire slackened. It appeared that their attention had been diverted elsewhere. The Canadian line held.

Across the river, Daly and Brugière were closing on Purdy. Around 1415 hours, Daly's two companies came into close range to Purdy's men and fired a volley. The countervolley wounded Daly, who then ordered a charge. Daly was again wounded, this time severely. Brugière also fell and command of the two companies fell to Lieutenant Benjamin Schiller. Pressed by the Americans, Schiller ordered a retirement. As Schiller retreated with the wounded Daly, Purdy's men rushed forward in hot pursuit. When they burst out onto the open by the riverbank they were astonished to see de Salaberry on the opposite side atop a stump eyeing them coolly through a telescope. With him were the Voltigeurs and militia. Enfilading musket fire tore into Purdy's men, breaking their advance and allowing Daly and Brugière to regain their ground. Groups of Americans ran into the bush. It was now 1430 hours.

As he witnessed the disorganized withdrawal from the far bank, Hampton received Purdy's earlier message that he had halted. Seeing that Purdy's attack had failed, Hampton broke off the attack and ordered Izard to retire about three miles. Purdy was told to withdraw. He moved up river and established a defensive position at a bend in

the river. Thinking Hampton would cover his crossing and protect his wounded, Purdy was shocked to learn that Hampton was already a mile further to the rear. Purdy was on his own. He had rafts built and a difficult crossing operation was made worse by harassing fire from the Indians.

For the Canadians, the business of collecting casualties commenced. Major General de Watteville, Sir George Prevost and members of their staffs arrived in time to witness Izard retire. Prevost addressed some of the troops and paid complement to de Salaberry's judgement in his choice of ground and conduct of the defence.⁴² Relief would soon arrive. After warning that another attack may come, both de Watteville and Prevost departed.

The soldiers spent a miserable night in their positions and on the ground where they had fought. Pickets kept watch on Hampton.

Losses to the Canadians that day were two killed, sixteen wounded and four missing. Sources vary on American losses, and are estimated to have been 21 killed, 33 wounded and 29 missing.

The next day, Macdonell reinforced the forward position with three more of his reserve companies. A heavy rain ensured that soldiers from both armies remained in discomfort - a few shots were exchanged, sometimes between lost troops of the same force. On 27 October, Purdy's troops managed to ford the river and meet up with Hampton near Spears'. Another council of war was held. It was unanimously agreed "that it is necessary, for the preservation of this army and the fulfilment of the ostensible view of the government, that we immediately return by orderly marches to such a position as will secure our communications with the United States, either to retire into winter quarters or to be ready to strike below".⁴³ The army commenced moving on 28 October under the observation of Lamothe's Indians. The withdrawal was impeded by the destruction of several bridges and harassment by the Canadians. Large quantities of equipment were found strewn along the route.⁴⁴ On 29 October, the Indians attacked the American camp killing one sentry and wounding seven others. By the end of the month, de Salaberry received confirmation that Hampton and his troops had left Canadian territory and were returning to Plattsburg.

While Hampton was withdrawing, the American column under General Wilkinson was moving along the St Lawrence towards Montreal.⁴⁵ A force of about 800 soldiers from Kingston clashed with Wilkinson at Chrysler's Farm⁴⁶ on 11 November 1813. Several uncoordinated attacks were made, but the disciplined British line held. Knowing that Hampton had failed, Wilkinson decided that the campaign was lost and returned to the United States.

Although the year had started bad for the British, the impact of their earlier defeats were lessened by the defeat of Wilkinson and Hampton. The British swiftly took advantage of these successes and recaptured Fort George and Fort Niagara, putting several American towns to the torch in the process.

Compared to events in Europe, Châteauguay was a small battle in what was considered a minor, peripheral war. Napoleon and the fate of Europe were at hand. Like war in Europe though, the armies fighting in North America were also battling

over the future of a continent. The American campaign against Lower Canada was their last major effort in 1813 to capture British North America. Strategically, the 300⁴⁷ Canadians who fought in the forward positions at Châteauguay held off an enemy tenfold in size, causing him to retire. The subsequent defeat of Wilkinson at Crysler's Farm confirmed the end of the American goal. It also speaks well of the Quebec militia and the Canadians serving in "British" regiments.

De Salaberry was praised for his conduct. Both houses of the provincial Legislative Assembly voted their thanks and a poem was published which raised de Salaberry to the heights of a classical hero. The officers of his regiment gave him a silver plate. Both de Salaberry and Macdonell were awarded the Army Gold Medal,⁴⁸ both of which were exchanged for the Companion of the Bath⁴⁹ in February 1817. Recognition for the soldiers had to await the creation of the Military General Service Medal⁵⁰ in 1847. De Salaberry was appointed Inspecting Field Officer Light Troops in 1814, but his military career was cut short due to poor health and he went on half-pay⁵¹ on 25 July 1815. He entered politics and remained busy in a number of fields. He passed away on 27 February 1829.⁵² Macdonell returned to England and went on half-pay 1817.⁵³

Militarily, the battle of Châteauguay demonstrated the successful application of several tenets of current Canadian doctrine, namely the use of the following combat functions: information operations, protection, firepower and command. Warfare in the early eighteenth century was based upon the smooth bore muzzle-loading musket, firing a ball of .71 calibre (this varied slightly between armies). Loaded in several steps and only effective to about 100 yards, a disciplined, tightly packed line⁵⁴ or column could quickly be stopped once closely engaged by an opponent. The most effective fire was the first round, after which misfires, mistakes in loading, clogging of muskets or simple fear took over. Aiming would also fall off. Meanwhile the enemy got closer. Lines would advance and fire upon one another in full view, each side waiting for the other to break. Resolution came by the appearance of fresh troops, a "charge" (actually more of a fast walk which sought to break a demoralised opponent - rarely did bayonet meet flesh). The appearance of a line of soldiers at this point, was enough to break a shaken enemy and cause him to flee or lead to the collapse of the enemy. Battles then were largely a test of nerve. The combat power of the Canadians at Châteauguay was enhanced significantly through the destruction of the opposite commander's will. Driven by their own fear, lack of conviction and an impression of the situation created by the enemy, both Hampton and Purdy became convinced that they faced a much larger foe. Given the small casualties of both sides, defeat on the moral plane proved more important than physical destruction. De Salaberry proved himself an effective field commander whose determination, exploitation of knowledge on the enemy's movements, judicious choice of ground, shifting of effort and clever deception broke the will of his opponent. Sickness, sustenance difficulties and the damning professional relationship between Wilkinson, Hampton and Armstrong made matters worse.

The effect of the strategic defeat was swift. The Wilkinson/Hampton Campaign "marching and countermarching most ingloriously was a fit subject for comic opera".⁵⁵ Serious questions were raised regarding the ability of any general officer to plan, organize or coordinate difficult operations, let alone grasp the underlying

strategy. Whatever the case, Montreal was too distant and strong an object. The public careers of Wilkinson and Hampton were finished. More competent leaders came to the fore and training for the army improved. Indeed, the American army of 1814 would be a much more formidable one, as both British and Canadian would soon learn.

Captain John Grodzinski holds a BA in Political Science from McMaster University and has recently commenced the Masters of Arts in War Studies Programme at The Royal Military College of Canada. He has served two tours with Lord Strathcona's Horse (Royal Canadians) and two staff tours dealing with domestic operations in Western and Atlantic Canada. He attended the Armor Officer Advanced Course at the US Army Armor Centre in Fort Knox, Kentucky and is a graduate of Land Force Command and Staff Course I. He is currently employed at the Directorate of Army Doctrine as the Managing Editor of the Army Doctrine and Training Bulletin.



Endnotes

1 Quoted from Suthern, Victor J.H. *The Battle of Châteauguay*, Occasional Papers in Archaeology and History, No. 11. Ottawa: National Historic Sites Service, 1974, p. 143. [\[Return\]](#)

2 Several excellent studies on this subject have recently appeared. Two important works are: Allen, Robert. *His Majesty's Indian Allies*. Toronto: Dundurn Press, 1972 and Antal, Sandy. *A Wampum Denied: Proctor's War of 1812*. Carleton University Press, 1997. [\[Return\]](#)

3 C.P. Stacey "The War of 1812 in Canadian History" in Zaslow, Morris *The Defended Border: Upper Canada and the War of 1812*. Toronto: The MacMillan Publishing Company of Canada, 1964, p. 331. [\[Return\]](#)

4 Some American historians have gone as far as to describe the War of 1812 as "the Second War of Independence", forgetting that the American aim was to capture British North America. By their failure to do so, "Canadian" independence was assured as was American. [\[Return\]](#)

5 From 1791 to 1841 "Canada" included the two provinces of Upper Canada (now Ontario) and Lower Canada (Quebec), created by the Constitutional Act. The Atlantic provinces were separate territories. Each province was responsible for the regulation of its militia. [\[Return\]](#)

6 Mention should be made of the "Militia Myth", which appeared following the war of 1812 and persisted into the beginning of this century. Its greatest advocates were Bishop John Strachan and Lieutenant-General Sir Sam Hughes. At the core of the "myth" was the belief that Loyalist militiamen had saved Canada from the Americans. The counter argument portrays the militia as disloyal and of no use. The truth lies somewhere in the middle. Using the militia to garrison forts, protect lines of communications, fatigue duties and yes, even battle, freed the regulars for combat

operations. The importance of the militia declined following Napoleon's abdication in 1814 when significant British reinforcements became available for service in North America. The efficiency of many militia units was aided by having numerous Canadian officers with experience from embodied or British service or both. Indeed, one historian has suggested that the Canadian militia had a core of professionalism that their American counterparts lacked. Advocates of the "Militia Myth" also used it to argue against the establishment and expansion of the permanent force in the latter part of the nineteenth century. An interesting debate, this subject demands further research. See Stanley, George F.G. *The War of 1812: Land Operations*. Toronto: Macmillan of Canada, 1983, p 417 and Gray, William. *Soldiers of the King: The Upper Canadian Militia 1812 - 1815*, Erin, ON: The Boston Mills Press, 1995, pp. 43, 44. [\[Return\]](#)

7"Line" is a term used to distinguish the regular army from other establishments. Exceptions to this were the guards, the marines, fencible, militia, yeomanry and volunteer units. Fencible regiments were raised for limited service for a specific period of time. Fencible regiments were traditionally responsible for "local" defence, which in Canada was expanded to include service anywhere on the continent. Provincial corps was limited to a smaller area. The line, fencible and provincial corps raised in Canada for the British establishment were: the 104th Foot (raised in 1803 as the New Brunswick Fencible Infantry, which became a British line regiment in 1810); The Royal Newfoundland Regiment (raised in 1803); The Canadian Fencible Infantry (formed in 1803) and The Glengarry Light Infantry Fencibles (taken onto the army establishment in August 1812). All of these units were disbanded in 1816 or 1817. [\[Return\]](#)

8 This was the quota of men and officers of the British army, which changed annually. Units raised in Canada for the British establishment were subject to the same regulations and conditions of service as other corps of the British army. Financial responsibility for these units was borne by the British. [\[Return\]](#)

9 The regiment was raised by the then Major de Salaberry. In 1813 the flank companies of the 4th Battalion, Select Embodied Militia and the Frontier Light Infantry were attached to it. The Voltigeurs were disbanded in March 1815. See Summers, Jack L. and René Chartrand *Military Uniforms in Canada 1665 - 1970*. Ottawa: National Museums of Canada, 1981, p. 67 and See Irving, L. Homfray. *Officers of the British Forces in Canada During the War of 1812 - 1815*. Welland: Tribute Print, 1908, p 105 - 109. [\[Return\]](#)

10 The terminology applicable to the militia in this period can be confusing. As fencible and provincial units were raised for the British establishment, personnel were also called up (mostly drawn by lot) from the sedentary militia into active service "embodied" units. For example, in Lower Canada, eight battalions of "Select Embodied Militia" were recruited with men from several divisions (geographical recruiting areas); the 2nd Battalion, Montreal Militia was ordered for garrison duty in July 1812, relieved on 24 August, ordered for service again in November 1812 and November 1813 and disembodied on 24 November 1813; in Upper Canada, several militia units were present at a number of battles. "Incorporated" units were generally volunteer units raised by a local notable. "Provincial" corps equated to a form of provincial regular force. Although embodied units fought in several battles, their main role was a supportive one. They built fortifications, performed guard duty, or protected supplies. There were also "provisional" or temporarily raised units and ad

hoc units formed from the companies of other regiments. See Gray, *Soldiers of the King*; James, Charles. *Military Dictionary*, London: The Military Library, 1802 and Chambers, Captain Ernest J. *The Canadian Militia: A History of the Origin and Development of the Force*. Montreal: L.M. Fresco, n.d.; Burns, Robert J. *Fort Wellington: A Narrative and Structural History 1812 - 1838*. Ottawa: Manuscript Report Series No. 296, 1979; and Irving. [\[Return\]](#)

11 See Stanley, pp. 257 - 258. [\[Return\]](#)

12 See Etling, John R. *Amateurs, To Arms! A Military History of the War of 1812*. New York, Da Capo Press, 1995, p. 147. [\[Return\]](#)

13 The blockhouse there was attacked by a force under Colonel Zebulon Pike, unaware that the garrison had departed. They were eventually joined by a party of American militia, who fired on Pike's men thinking they were the enemy. A Canadian force then returned and forced the Americans to withdraw. That force was under Lieutenant Colonel de Salaberry, the hero of this story. Pike was killed in 1813 during the attack on York. [\[Return\]](#)

14 Stanley, pp. 143 and 167. [\[Return\]](#)

15 The American plans were overheard by Laura Secord, who then warned the British. [\[Return\]](#)

16 During the battle, the great Indian leader, Tecumseh, was killed. [\[Return\]](#)

17 See Stanley, pp. 214 - 215. [\[Return\]](#)

18 Suthern, p. 101. [\[Return\]](#)

19 Etling, pp. 137 - 138. [\[Return\]](#)

20 The roots of this hatred are obscure. Hampton regarded Wilkinson as corrupt and "beneath a gentleman to deign to notice" Over the years, their feud had split the army into hostile cliques. See Etling pp. 136 - 137. [\[Return\]](#)

21 Stanley, p. 254. [\[Return\]](#)

22 Suthern, p. 103. [\[Return\]](#)

23 This unit provided artillery drivers. [\[Return\]](#)

24 The two "flank companies" of the infantry battalion were often grouped into provisional battalions. See note 25. [\[Return\]](#)

25 Infantry battalions consisted of eight "line" companies, one light company and one of grenadiers. The latter two were referred to as "flank companies" Line companies were also referred to as "battalion" companies. [\[Return\]](#)

26 Suthern, p. 106. [\[Return\]](#)

27 Stanley, p. 251. [\[Return\]](#)

28 One of them, Edward, was killed at Badajoz on 6 April 1812, along with Francis

Simcoe, son of John Graves Simcoe the first Governor of Upper Canada. See Wohler, J. Patrick. *Charles de Salaberry: Soldier of the Empire, Defender of Quebec*. Toronto: Dundurn Press Limited, 1984, p. 29. [\[Return\]](#)

29 Suthern, p. 109. [\[Return\]](#)

30 Suthern, p. 111. [\[Return\]](#)

31 Stanley, p. 253. [\[Return\]](#)

32 This was a settlement owned by a man named Spears. It is now called Ormstown. [\[Return\]](#)

33 The 2nd Battalion, Beauharnois Division had been embodied on 27 September 1813. [\[Return\]](#)

34 A small defensive work perpendicular to the main line. [\[Return\]](#)

35 4th, 33rd and 34th United States Infantry. The militia and volunteer units were from New York. [\[Return\]](#)

36 Suthern, p. 120. [\[Return\]](#)

37 The order had been written by the Secretary of War, John Armstrong on 16 October. "Jumping to the conclusion that the campaign was at an end, he [Hampton] imagined that he was being sacrificed, and could "neither feel security nor expect honor". Forthwith, he submitted his resignation; if he had not already committed Purdy, he would have countermarched the next morning" Etling, p. 146. Hampton wrote: "This paper sunk my hopes, and raised serious doubts of receiving the efficacious support which had been anticipated. I would have recalled the column, but it was in motion, and the darkness of the night rendered it impracticable. I could only go forward" Suthern p. 120. Armstrong had failed to emphasize that this was a *precautionary* measure only. [\[Return\]](#)

38 This battalion was formed at Kingston in June 1813 and consisted of the two flank companies of the 2nd and 5th Select Embodied Militia and the first flank company of the 3rd Select Embodied Militia. [\[Return\]](#)

39 Lamothe was an agent of the Indian Department, which effected Indian policies in North America. At this time, military alliances with the Indians were paramount and the agents were often army officers as well. Lamothe was ranked as "Resident and Captain" with the Abenakis and Iroquois. He was also an officer with the 3rd Battalion, City of Montreal Militia. See Irving, pp. 169, 214, 217. [\[Return\]](#)

40 Suthern, p. 129. [\[Return\]](#)

41 Suthern, p. 129. [\[Return\]](#)

42 In a confidential report, de Watteville was less praising of de Salaberry, "that officer was culpable in a high degree in neglecting to report to his commanding officer [de Watteville] the approach of the enemy, which must have originated in his being surprised or from a wilful neglect, in either case highly censurable" The only word de Watteville received of the action was a message from Macdonell and the

sight of wounded arriving by canoe. Regardless, de Watteville could not have missed the sound of firing; he may have decided to stay at La Fourche to direct the action. De Watteville's report tarnished de Salaberry, who succeeded in receiving proper recognition for the battle. See Suthern p. 120 and Wohler. [\[Return\]](#)

43 Suthern, p 138. [\[Return\]](#)

44 Reported at 150 muskets and six drums. [\[Return\]](#)

45 Several units of the sedentary militia were called out to meet this threat. [\[Return\]](#)

46 Also spelt as Chrystler's Farm. [\[Return\]](#)

47 The Canadian dispositions during the battle were as in the chart below (Source: Suthern, pp. 133, 134): [\[Return\]](#)

	Five companies Canadian Voltigeurs	300
	Eight companies 2 nd Battalion Lower Canada Select Embodied Militia	480
In the Right Rear of de Salaberry	1 st Battalion Sedentary Militia of Boucherville	200
	Indians	150
Summary	Firing Line	461
	Reserves	1131
	Total	1592

48 The Army Gold Medal was instituted in 1810 and was awarded to general and field officers for gallant service in the Peninsular War and the War of 1812. It came in two sizes, the larger being awarded to general officers. The name and rank of the recipient were engraved around the edge of the medal and the name of the battle for which it was awarded was engraved on the reverse. A total of 596 small gold medals were awarded, 18 of them for the War of 1812 (Fort Detroit, Châteauguay and Crysler's Farm). See E.C. Joslen *British Battles and Medals*. London: Spink, 1988, pp 67 _ 68. [\[Return\]](#)

49 The Most Honourable Order of the Bath was instituted in 1725. In 1815, it was reorganized into a civilian and military divisions, the latter having three classes. Following the Peninsular War in 1814, award of the Army Gold Medal was discontinued and recipients of the medal received the Order of the Bath. In the case of de Salaberry and Macdonnell, they both received the Companion of the Order of the Bath. Joslen, p. 66 and Mackay, James, et al, ed. *The Medal Yearbook 1998*. Honiton, UK: Token Publishing Limited, 1998, p. 52. [\[Return\]](#)

50 The Military General Service Medal was authorised on 1 June 1847 and issued in 1848. The 29 bars awarded with the medal commemorated battles from 1793 to 1814. Given the number of years that had passed only 26,650 applications were made. Many medals went to the next of kin as the recipients had died. A total of 911 medals were awarded for the War of 1812. Of these, 339 single bar medals were for Châteauguay (one member of the Upper Canadian militia, 251 from Lower Canada, 82 Indians, four members of the Royal Artillery and one "other"), six double bar recipients (Fort Detroit and Châteauguay or Châteauguay and Crysler's Farm) and three triple bar medals (Fort Detroit, Châteauguay and Crysler's Farm). See Joslen pp 69, 70 and 78 and Stanley, pp 425 _ 426. [\[Return\]](#)

51 This was an allowance given to officers who have been "reduced" (that is their corps disbanded and there services no longer required) or as a compensation to individuals who have retired from active service. See James, *Military Dictionary*.

[\[Return\]](#)

52 A monument to de Salaberry was unveiled at Chambly in 1881. [\[Return\]](#)

53 See Irving p. 29 note 14, and p 107 note 1. [\[Return\]](#)

54 A 600 man strong battalion formed two deep had a frontage of about 200 yards.
[\[Return\]](#)

55 Etling, p. 150. [\[Return\]](#)

[\[Français\]](#)

Trends In Tactical Intelligence

Global Conflict and the Canadian Forces

Captain Robert Martin, CD

Pity the doctrine writers. All their efforts, read by practically no one save Staff College DS. Wrestling with nagging questions regarding a proper strategic role for Brigade-sized Judge Advocate General (JAG) formations. They are pulled towards emerging doctrinal poles: maintain the status quo (although adding current buzzwords), or attempt to Canadianize futuristic US doctrinal musings (Revolution in Military Affairs, Force XXI, Army-After-Next *et al*). Given the recent number of badge and uniform related items appearing in the DND newsletter, *Maple Leaf*, I assume Americanization is taking precedence.

Doctrine though, however much maligned, is a serious topic. It establishes the way in which we think about conflicts. As such, professional soldiers worthy of the name have an obligation to engage in informed debate on the various aspects of the doctrine with which we may eventually fight wars. We have received well-earned kudos for our disaster relief efforts, as well as maintaining a reputation as the UN's Pavlovian choice in peacekeeping operations; perhaps too much so. A recent letter in *Maple Leaf* states that "conflict mediation in the field, hands-on diplomacy, may become [our] most useful 'battlefield' role," adding that humanitarian relief in response to global warming will become increasingly important.¹ Such twisted logic would have a fire department exist primarily in order to rescue cats from trees. This, however, should not distract our policy-makers, military leadership and each and every soldier that war-fighting remains our reason for existence. We are morally obligated to provide our soldiers with the best leadership and assistance possible. Tactical intelligence is evolving to provide that very necessary support.

While conventional wars have been a statistical rarity since 1945, the cost, in soldiers' lives, of not being prepared for CF involvement in such a conflict is high. Even below the level of total war, this decade has already seen our troops providing airfield security in a potential chemical environment, engaging in the largest firefight since Korea during a supposedly benign peace stabilization mission, solving a Civil Authority crisis wherein armed citizens disrupted one of our largest cities or assisting several chaotic countries as they experiment with democratic processes. Interesting times, indeed.

In a scenario wherein one previously envisaged Combined Arms Armies rolling across western Europe, intelligence support to an infantry battalion or armour regiment was relatively insignificant. I intend to show how this has changed by providing an overview of the evolving conflict environment and CF responses, in order to illustrate current trends and

possible avenues for tactical intelligence.

International "Stability" Since 1945

It has been widely assumed, particularly in the West, that the world has been a relatively peaceful place since the Second World War ended. Of course, this perception may not be as commonly espoused amongst those people who were "downrange" during the subsequent



The CF "peacekeeping mindset" was largely established through thirty years of rotating troops through Cyprus.

conflicts from Nicaragua to the Golan Heights to Belfast. Overwhelmingly, conflict in the second half of the twentieth century has had two motivating influences, occasionally acting concurrently. The first was the rapid decolonization that followed World War Two. Some decolonizing efforts went more smoothly, from the European perspective, than others. However, repercussions remain unresolved, as demonstrated by the recent India-Pakistan nuclear tests. In French Indochina the Viet Minh victory exemplifies both colonial independence and the growing spread of international communism. This communist ideology became the other main influence on late twentieth century warfare.² The policy of "containment," as practiced in Korea, provided the Canadian Army with its only opportunity to participate significantly in a mid-intensity crisis since 1945.³ Globally, the past fifty years have witnessed approximately 330 skirmishes of varying intensity and duration. Of these, 14 have been major conflicts involving in excess of 100,000 soldiers. If one further sets aside, for the moment, revolutionary guerrilla wars, such as the Chinese Civil War and French Indochina, we are left with six conventional "balanced, general-purpose combat capable" wars: Korea, Israel/Egypt/Syria (Six Day War), Israel/Egypt/Syria (Yom Kippur), Iran/Iraq, Falklands, and the Gulf War.⁴ I have no doubt that some readers will have their own favourite conflicts they would like to see included in this list. Nonetheless I believe the point is statistically obvious; limited wars remain overwhelmingly the norm in our modern world. Previously, large-scale war was considered a paying proposition. "You gained sufficient gold, glory, geography, or vindicated your God."⁵ Notwithstanding other limiting factors such as international economic interdependence, war's deglorification, nuclear weapons and spreading democracy, very few, if any, countries have a defence budget adequate to fight big wars. So what then, of the future?

Future Conflict: Crystal Balls And Diverging Trends

Traditionally, most major armies have dedicated their efforts toward

preparing to fight a similarly armed and trained foe. Whether as a member of the US 11th Armored Cavalry Regiment in Hof, West Germany or the 122nd Guards "Banner of the Red Star" Motor Rifle Division in East Germany, the doctrine and equipment were roughly the same. The overwhelming numbers of smaller wars during this period were generally ignored. However, these have been "rediscovered" in the post-Cold War outburst of literature regarding future conflict. As we shall see, two divergent trends appear to be operating concurrently; devolution of warfare, wherein the machete appears to be the weapon of choice, coexistent with information technology promising several virtually bloodless, war-winning options.

Tribalism...



The results of ethnic cleansing. Monitoring mass grave exhumation is not a standard war-fighting task, but one that our soldiers conduct with excess frequency.

While there was a growing feeling that conflicts were transforming, the seminal paper by Samuel Huntington, "The Clash of Civilizations?," brought the issue to wider attention within the academic world; and more slowly, the military.⁶ He posits that future conflict will have its basis primarily in cultural differences

rather than ideological or economic. Fighting will predominantly occur between Western and non-Western civilizations, and amongst non-Western civilizations. Amongst his examples, the continued hostility between Catholic Croats, Muslim Bosniacs, and Orthodox Christian Serbs in the former Yugoslavia remains relevant for the CF.

Another respected theorist, Martin van Creveld, states unequivocally that in terms of global conflict, the world is coming to resemble that of the pre-Westphalian period (ca. 1648) more so than any other. The propensity in war fighting is toward groups currently referred to as terrorists, bandits, and guerrillas. Citing US experience in Beirut and the Soviets in Afghanistan, van Creveld insists that "much present-day military power is simply irrelevant as an instrument for extending or defending political interests over most of the globe."⁷ As external funding from ideologically motivated patrons decrease, the gangs will turn increasingly to robbery and extortion to finance their activities; further blurring the traditional lines between war, crime and terrorism.

In the forefront of the theorists examining the type of soldier likely to be encountered in future conflict is a retired US Army Intelligence Officer, Lieutenant-Colonel Ralph Peters. Peters' numerous articles emphasize the

trend in non-standard war-fighters; the "new warrior class." Of these warriors, i.e: the scum of the earth ("no stake in peace, a loser with little education, no legal earning power"), the "average Joe" drawn into the conflict, demobilized military men with few non-soldiering options, religious zealots and the opportunists/profiteers, two are particularly worrisome; "the gangsters and the Godly."⁸

Echoing these sentiments, while adding the potential conflict impetus of ecological calamity and resource scarcity, is Robert Kaplan. His notable article, "The Coming Anarchy,"⁹ notes that the synergistic effects of scarcity, overpopulation, crime, tribalism and disease are increasingly destroying social cohesiveness. Approximately 95 percent of the forecast population growth in the coming years will be in the poorest regions, where governments already show little ability to function. Canada's Army has first hand experience with the anarchy of Somalia, Rwanda, and former-Yugoslavia; all examples cited by Kaplan.

...Versus Techno-War

Standing in stark contrast with the bleak viciousness of future conflict previously noted, is the almost sterile warfighting methodologies of the "techno-warriors." Perhaps the most representative theorists, being highly recommended within the US military, are Alvin and Heidi Toffler; the prophets of "salvation by technology." Their thesis being that "third wave" warfare, based primarily upon information technology, as opposed to first wave (agrarian/tribal) and second wave (industrial), will be the dominant form of war fighting. The key expression throughout their work is "de-massification;" the theory that smaller formations using superior information management and targeting will readily defeat all potential opponents.¹⁰

It is in this context that Information Operations (IO) becomes significant. Elements comprising IO include: Operations Security, Psychological Operations, Military Deception, Electronic Warfare and Physical Destruction, in addition to supporting Civil Affairs and Public Affairs capabilities.¹¹ IO should not be considered a new concept. In a 1918 memo, "Strategic Paralysis as the Object of Decisive Attack," MGen JFC Fuller wrote:

*"Our present theory is to destroy personnel; our new theory should be to destroy command. Not after the enemy's personnel have been disorganized, but before it has been attacked, so that it may be found in a state of disorganization when attacked."*¹²

Information Operations capitalize on the growing sophistication, connectivity and reliance on information technology. IO is not science fiction-type Computer Network Attack (CNA), although that is one aspect. Its aim is to deny information or provide information (possibly distorted) supporting our effort, degrade or destroy the adversary's command, control, communications and intelligence (C3I) function and

generally influence the decision making capability. The key target is this information dependent process, whether human or automated. The IO campaign may attempt to get "inside the enemy's OODA loop (Observe, Orient, Decide, Act)" allowing us to assault before he can defend, or merely convince the local populace not to interfere with our operations. Some aspects of IO are more obviously applicable to large-scale combat operations, such as deceiving a relatively sophisticated intelligence structure regarding an impending amphibious operation. Conversely, while providing humanitarian aid security in a failed society, the adversary may not be susceptible to Computer Network Attack, given a lack of functioning infrastructure. However, a coherent Deception or PsyOps campaign may pay benefits out of all proportion to our investment.

Summarizing the current literature, I believe that the object lesson most clearly drawn from the Gulf War is not to fight the United States, and hence its coalition allies, on western terms.¹³ The greater the lead trumpeted by NATO in high-technology



information-warfare capability, the less precision targeting, often failing to stress the likely we are to be added requirement for precision information. engaged in this realm.

This effectively forces most potential enemies to engage in guerrilla warfare, ecological attacks or other means of asymmetrical warfare. Given the increasingly potential availability of Weapons of Mass Destruction, particularly chemical and biological weapons, terrorism becomes an almost irresistible option.

However, for those nations financially capable of pursuing technological options, the Gulf War has demonstrated the utility of satellite reconnaissance and precision-guided cruise missiles. Several so-called rogue nations, such as Iraq, China and North Korea have all demonstrated a willingness to sacrifice economic development in favour of arms acquisitions. Should a large-scale, Gulf War-style conflict erupt, the emerging "third-wave" warfare technologies will likely play a leading role. Again, our professionalism requires us to "hope for the best, but prepare for the worst."

The Canadian Forces Response To The Global Situation

The Canadian Forces' mandate, most recently reiterated in the 1994 Defence White Paper, is to provide "balanced, general-purpose combat

capable forces." The Canadian Army has always trained for a variety of missions, and could therefore react favourably to almost any situation. This flexibility was one of the military's major assets. Since the mid-1970s, however, fiscal considerations began playing an increasing role in the curtailment of training options. Amongst the other ramifications of budget cuts has been a serious decline, and possible loss of that flexibility as commanders lost the leeway to train in areas beyond the "lowest common denominator." Then-Defence Minister Collette acknowledged this reality, stating that a "country of Canada's size and means cannot, and should not, attempt to cover the entire military spectrum."¹⁴ Further, the utility of training for conventional war based on mass may be increasingly suspect since economic constraints deny the army that very mass. Official Army policy states that "with considerable assistance from other CF elements, the army is required to assemble, train and field one combat capable, fully manned and equipped Brigade Group."¹⁵ This, of course, is the upper level of sustainability without mobilization. Rotating even a composite Battle Group through Bosnia reveals strains within the system.

Notwithstanding official pronouncements of this reality, the average soldier continues to spend more time deployed or supporting operations than his counterpart of the 1970s or '80s, when we fielded four Brigade Groups from which to draw. However, while there may be misgivings regarding the reduced equipment and warfighting training, our troops will shoulder their "rucks," and get on with it. For their sake, the changing conflict environment and curtailed budgets compel us to maximize any "force multiplying" efforts; in this instance, a re-focussed tactical intelligence system.

Trends Within The Intelligence System

The intelligence system is marked by an on-going struggle to acquire sufficient and accurate information for those that require it, normally against time constraints and an opponent determined to deny, or provide false, information. Understanding the uncertain nature of intelligence production would lead to more flexible planning, in that adaptable options are superior to tying courses of action to definite, but possibly unconfirmable, enemy situations. This awareness is becoming more important, as not too long ago, it was unusual to see a soldier awarded more than a Cyprus ribbon. However, our current operational tempo sees troops with experience in the former-Yugoslavia, the Persian Gulf, Haiti, the Middle East, Africa and Central America. While commanders increasingly appreciate the requirement for efficient intelligence, the system has apparently displayed a number of weaknesses.

Weaknesses Perceived

Doctrinally, battalions and battle-groups receive any necessary intelligence support from higher headquarters. It was not envisaged that independent battle-groups would be placed in harm's way within the context of a NATO response to Soviet aggression. It is likely for this

reason that CFP 315(2) *Combat Intelligence* had little to say regarding intelligence operations below brigade level.

There was a history of "operational realities" being based on a six-month stint sun-tanning in Cyprus. Tactical uncertainty was limited to when, immediately prior to mandate renewal, rock-throwing would commence, thus justifying the continued UN presence. This could reinforce a familiarity with the shortcomings of intelligence, but not necessarily expose commanders to the national-level support which was, and is, available.

Because of the requirement to ensure certain training objectives are met during field exercises, enemy play tends to be scripted, eliminating warfare's uncertainty. Quite often, with the Intelligence section called upon to provide this enemy script and supporting details, it became difficult for the G2/IO to train the section personnel in necessary assessment skills, leaving only the physical tasks of map-marking and CP routine.

The Intelligence Branch itself appeared uniformly enamoured with signal intelligence (SIGINT) and Imagery support to National Command, almost to the exclusion of all else. There were, of course, exceptions, but I suspect that these were based more on individuals having served in the Airborne or Signals Regiments.

Finally, the intelligence function was hindered by the perception that the Intelligence Branch was a "dumping ground" for those failing their Combat Arms classification of choice, or who subsequently became medically unfit. Arguably the creation of the Public Affairs and Training Development classifications has removed some of the pressure. More positively, however, military downsizing has seen an increase in operationally competent personnel realizing their "calling" to the Intelligence Branch.

In effect, Commanders and staff had little training in effectively employing Intelligence personnel in tactical operations. Those that made the attempt occasionally faced disappointment due to the insufficient training/capability inherent in the Intelligence system, its personnel and/or the support they were able to receive from national sources. Fortunately weaknesses, both real and perceived, are being addressed.

Underlying the following major trends are three intertwined factors: determining requirements, improving the actual conduct of "intelligence," and adopting emerging technologies.¹⁶ These should be obvious. Priorities not operationally driven are irrelevant. If the commander does not receive a timely, applicable intelligence product, priorities are meaningless. Failing to assimilate available technology is poor operational business practice, whose ineffectiveness is both fiscally irresponsible and denies our troops potential tactical advantage, thus widening the "OODA" gap.

Intelligence Support Where It Is Required

It recurrently develops that intelligence remains a "best guess" proposition despite numerous technical and analytical advances. The critical variable being better training and experience, the better the intelligence product.¹⁷ In order to provide those tactical units most often operationally deployed with soldiers optimally trained to provide this support, there is a recent trend for the assignment of Intelligence Branch personnel down to battalion/regimental level. Given the disbandment of the Canadian Airborne Regiment and the subsequent removal of Intelligence soldiers from Combat Arms units below brigade, this trend represents a return to a more effective structure. The requirement becomes more obvious given the increasingly technical nature of the intelligence system, changes evident in the international system, and, as mentioned, the recent record of Canadian Forces' deployments.

Since historically, the structure of intelligence sections within infantry battalions or armour regiments was largely irrelevant, the quality of the section remained very much dependent upon the views held by the Commanding Officer. For example, even within the same regiment, the leadership of one battalion's intelligence section consisted of a rather senior lieutenant and a sergeant, of which only the sergeant had attended the Combat Intelligence course. The CO of the other battalion, placing a higher emphasis on intelligence, had placed a competent, well-respected captain and warrant officer in his Intelligence section.¹⁸

If doctrine and history both supported the premise that infantry battalions would have their intelligence requirements met sufficiently through the efforts of the higher brigade G2 staff, even this arrangement would remain acceptable. However, given the increasing pace of battle, the likely tactical environment and the fact that of battalion deployments without attendant brigade support, this premise is flawed.¹⁹ Naturally, the operational staff will want to know everything about the enemy; his thoughts, strengths and weaknesses, his future plans. Such absolute knowledge is, of course, impossible. We rely upon the commander's skill to overcome this interval between operational desires and our intelligence capabilities. Reducing such a knowledge gap can be aided by filling the staff positions with the best possible soldier, and ensuring that the intelligence and operations systems be made as responsive as possible. For an Intelligence Officer, knowing where to get support for the Commander and how to interface with, and get optimal value from the intelligence system are key elements. Given the increasing amount of technical knowledge required to effectively exploit the intelligence system, professional Intelligence personnel are therefore required within operationally deployed headquarters. This presupposes the Intelligence soldiers' tactical acumen, personal fitness and field orientation will allow integration within the combat environment.



Reports from the 2CMBG IFOR (Intervention Force) rotation stated that the "information coming up from unit intelligence



A reserve Intelligence Operator receiving a secure fax from one of the deployed companies in Bosnia. Electronic connectivity was available to divisional and national headquarters. On-going integration of secure technology will soon allow assessment and dissemination of information in electronic format to the troops in contact.

sections was...marginal at best. The lack of this information was the single weakest link in the intelligence function." The Brigade G2 suggested that the provision of Intelligence Branch personnel down to the battalion level would help correct this problem.²⁰ Indications from the follow-on *Op PALLADIUM* Battle Groups suggest that having Intelligence officers and non-commissioned members attached, even on a temporary basis, has reduced the problem, although some concerns remain. These issues are generally centred on reporting from the company-level. This is likely a training failure, in that the infantry soldiers are simply not used to reporting information up to a perceived less-than-effective or non-responsive, Combat Arms Intelligence section.²¹ The presence of Intelligence personnel with a professional vested interest in correcting this situation is doubtless improving this inadequacy.

Linked with this trend is the adoption of manoeuvre warfare as doctrine. Key to manoeuvre warfare is the delegation of decision-making in crucial combat situations to lower echelons. By definition, if not by common sense, rational decision-making requires timely access to relevant information which is as complete and accurate as possible. While this is critical for lightly armoured mechanized infantry, it is absolutely essential for Light Infantry, relying on stealth, manoeuvre, initiative, and avoidance of enemy strength to compensate for reduced armour protection and fire support weapons.²² As the international system further demands the deployment of "lighter" military forces in situations where tank and heavy artillery support would be publicly perceived as inappropriate, regardless of its tactical utility, infantry (and other arms "re-roled" to infantry) will repeatedly be placed between belligerent forces. This again argues for increased, effective intelligence.

The inclusion of "Int cap badges" has been implemented within the United States Marine Corps, which has found that a dedicated Intelligence staff has a greater knowledge of national-level sources which are available to be tapped.²³ In a mutually supportive manner, the national-level agencies are increasingly willing to support tactical formations, perhaps cynically, if only to provide increased justification for these national-level and technically-oriented organizations in

fiscally-restrictive times. This produces a mutually beneficial arrangement in that at the tactical level, the troops in contact, particularly in an operation other than war (OOTW) scenario, are quite often the best sources of information required at the strategic level.

In war, intelligence drives operations; the better the intelligence acted upon, the more effective the operations. In training, adding non-scripted "intelligence unknowns" would provide more realistic conditions for dynamic exercises. "Training how you fight" calls for integration of the Intelligence staff now, before deployments.

Increasing Awareness Of Human Intelligence (HUMINT)

During current deployments the Intelligence section is required to operate in an environment so diverse as to be virtually unrecognizable to a battalion Intelligence section of only a decade ago. Within the on-going Bosnia deployment, for example, the Battle-Group Intelligence section is required to interact with a large number of allied intelligence, reconnaissance, special operations forces and humanitarian relief organizations, in addition to accessing national-level sources and agencies. They participate in regular meetings with representatives from Public Affairs, Military Police, US and British Special Forces and Non-Governmental Humanitarian concerns, along with Divisional elements of Electronic Warfare, Counter-Intelligence and Psychological Operations.²⁴ For the purposes of operational efficiency, much added value can be received through the credibility of "speaking the same language" in regards to the intelligence system.

The previously mentioned futurists all argue for an increased intelligence focus on cultural issues and non-traditional military structures. Quite often our military profession becomes focused on military-technical aspects, practically oblivious to potentially significant social, cultural, political and economic dynamics.²⁵ While background information is usually available through basic database management, details on underlying cultural or philosophical assumptions and current facts often requires personal interaction with those "in contact." SIGINT and imagery intelligence (IMINT) are highly valued tools when facing an adversary fielding Combined Arms Armies. These sources could provide a commander with sufficient, and possibly the only warning to respond to mobilization or movement of large mechanized formations. While their utility remains unquestioned, there is an issue of relative merit when contrasted with HUMINT. While a picture may be worth a thousand words, it will seldom provide conclusively the enemy's intentions. The CF has thus seen a recent expansion in the requests from NATO to provide HUMINT qualified personnel to support SFOR (Special Force). This training and operational experience will provide additional value in large-scale, conventional war, since history has demonstrated the utility of information acquired from refugees and prisoners which are an inevitable accompaniment to warfare. It should be noted that the interrogation element of HUMINT is presently awaiting legal approval.

Intelligence Support To Information Warfare

Within the US military Information Warfare is seeing Intelligence assume a tactical, war-fighting role. In conjunction with manoeuvre warfare's extended area of interest, lower troop densities and smaller manoeuvre elements, Intelligence support down even to the Combat Team level is a concept of growing importance.²⁶ The decentralized nature of "sensor to targetting

"Quite often our military profession becomes focused on military-technical aspects, practically oblivious to potentially significant social, cultural, political and economic dynamics."

to shooter" argues for ensuring connectivity down to the lowest level, concurrent with providing these manoeuvre elements with integral Intelligence support necessary to effectively respond to the commander's plans. Increasing emphasis will be placed on Information Operations (IO) as a combat multiplier in both conventional operations and OOTW.²⁷ While information has always been the "personal weapon" of Intelligence soldiers, intelligence support to IO now combines established, with emerging non-traditional concepts. Intelligence enables commanders at all levels to focus their combat power and resources upon the enemy's weaknesses, as well as providing for our own force protection. The Intelligence system retains a vested interest in exploiting information regarding the enemy's strength, weaknesses, capability, intent, courses of action, and so on. This will not change as long as soldiers square off across the forward edge of the battle area (FEBA). For IO, the added emphasis tends towards targeting the adversary's centre of gravity, whether it is the tank forces or the popular support of a certain faction within the army. Traditionally, tactical intelligence would not have invested as much effort into questions of political support, economic weaknesses or other "non-warfighting" issues. We cared about Orders of Battle and when the assault river crossing was going to commence. Intelligence exists to assist the commander in determining the best method of defeating the enemy. In a given situation, the best method may not require combined-arms manoeuvre, but rather, exploiting an increased awareness of targeting the enemy's information systems. As such, determining the capabilities of the national radio service may prove as critical as the weaknesses of his main battle tank, if this can be used to convince the armoured soldiers to surrender. Can the asymmetries or symmetries between our forces be exploited? Do we need to destroy their fixed headquarters, or will disabling the power grid suffice? Which option places greater risks upon our soldiers, in relation to likelihood of success?

The Intelligence system is adapting to these changing realities. From template ORBATs, we now require information on: technical requirements of a wide array of information systems; political, social and cultural influences; a potential adversary's decisionmaking process; an in-depth knowledge on the motivation and biographical data of decisionmakers, their advisors and communicators.

Caveats And Concerns

On today's fast, lethal, and non-linear battlefield, it should be readily apparent that the changes in technology and warfare will further reduce the time available for making critical decisions. Sensors and sources proliferate yet there has not been an equal expansion in C3I systems, although fielding the Joint Command and Control Information System (JC2IS) computer links down to brigade is the first of several positive steps. Until there is full connectivity down to the Combat Team level, providing more proficient Intelligence staff will ease, but not correct, this problem. Lack of connectivity will create escalating demands for solution as information becomes more critical, and the bandwidth requirement to transmit this information increases.

The growing need for Intelligence doctrine to be embedded in operations down to the lowest tactical level raises two issues. First, changes within the Combat Training Centre and the various Staff Colleges and Schools have virtually eliminated Intelligence Directing Staff. Waiting until a Combat Arms officer, as a senior major, attends the 10-month Staff Course in Toronto is far too late. Because of this late introduction to Intelligence doctrine, command perception is quite often personality driven, based on positive or negative experiences between Intelligence and Operations personnel, rather than based upon a solid doctrinal foundation. Secondly, and for obvious reasons, tampering with military doctrine is not to be taken lightly in any army. For doctrine to be effective, it has to be understood, relevant and "living." Operational doctrine must be a dynamic process representing a means to an end, rather than a dogmatic end in itself.²⁸ The requirement is becoming absolute for fully integrated Intelligence soldiers with tactical acumen, connectivity and access to strategic-level intelligence support and the ability to address cultural issues as readily as providing technical advice on an adversary's Information Warfare weaknesses. This is going to require increased training and perhaps greater care in selecting Intelligence personnel than may have occurred in the past. However, while there may be disadvantages to changing the structures of combat arms units to accommodate Intelligence Branch personnel, these are minimal when contrasted with "going into the ring blindfolded" due to ineffective intelligence support.

So What Does It All Mean?

With various regional crises built around self-styled "warlords" utilizing ethnic violence, there is a growing requirement for armed intervention as a precursor to humanitarian assistance. For the Canadian government, the political gesture of choice has become the deployment of a composite Battle Group. These are increasingly being supported by an advanced combat intelligence capability. In addition to the on-going catastrophes of the Third World, there are areas of great risk such as the Pacific Rim which include the combination of 42 potentially hostile nations, two-thirds of the world's population, and seven of the ten largest

armies.²⁹ This argues against neglecting our "balanced, general-purpose combat" skills as we pursue media-friendly humanitarian missions. It is in this conventional war-fighting role that all of the aforementioned trends in tactical intelligence will pay dividends in soldiers' lives.

The increasing relevance of the "strategic soldier" will have greater impact on tactical operations. That is, the direct national-level involvement following the publicity of an UNMO held hostage at a potential target site or a beaten US soldier being dragged through Mogadishu before CNN. This non-hierarchical passage of information indicates that strategic intelligence analysis will increasingly affect deployed soldiers' lives, and will probably serve to increase the tempo of operations at the tactical level in response to strategic demands that "something be done."

Specifically regarding the Intelligence function, there will always exist doubt concerning its effective production. Absolute knowledge is not achievable. In order to maximize the information available to support an operation, the commander should demand the most highly qualified soldier available. The logic that unquestioningly provides specialists for combat support and service support, such as signals, maintenance and supply, applies equally to intelligence. In an increasingly unstable and hazardous world, tactically deployed Intelligence personnel with technical connectivity to national-level intelligence support can enhance the Information Operations campaign, effectively exploit varied human sources and provide input from an adversary's perspective that is routinely demanded at higher levels of command. Including Intelligence in the unit establishment enhances our general-purpose combat capability, and not insignificantly, meets the requirement to "train as you fight" before the rounds start impacting. The recent increased demand for this Intelligence support indicates a growing awareness amongst operational commanders of the requirement for intelligence, as well as the weaknesses inherent in the previously acceptable system. Now, while we are in agreement, is the time to doctrinally confirm the necessary improvements in the Intelligence-Operations interface.



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Nobody Moves, Nobody Gets Hurt

A Major Heresy

Captain Robert A. Herold, CD

Please note that the comments on explosive handling and safety expressed in this article are the opinions of the author and do not necessarily represent DND/CF policies.

As an Ammunition Safety Officer, selling explosive safety is a major concern. It is becoming apparent however that there is an increasing resistance to safety as a whole. Too many good officers and NCOs are openly critical of the regulations and accident investigations in many cases find that safety rules have been ignored or skirted. Frustration is growing, with the common perception that those drafting safety policies are out of touch with the needs of the army. This article intends to consider our present policies.

The objective of any safety programme is to reduce casualties and damage to material. It is important to recognize that safety is not an end in itself. It's not just because of our kind, warmhearted nature that we have safety programmes. At the risk of sounding callous, the fundamental reason to keep accident rates low is to preserve enough people, equipment and money to accomplish our mission.

If the aim is to reduce casualties and damage, four interrelated questions then follow.

First - To what levels can casualties and damage *realistically* be reduced? In theory, we would like total elimination - zero accidents, zero casualties and zero damage. In the real world, this is impossible and an educated decision must be made as to what results we are willing to settle for.

Second - To what lengths are we willing to go in order to achieve this goal? For instance, the surest way of eliminated mobile support equipment accidents would be to permanently park all our vehicles. Obviously, that's an unacceptable course of action, so what are the acceptable ones?

Third - What side effects are we willing to accept as a consequence of our safety measures? Taking the case above, the effects of grounding the fleet would be both short and long-term. The short-term results would be easy to recognize - mail not getting delivered and people having to take commercial transport to the airport instead of the inter-base bus service.

Long-term results are sometimes less easy to recognize and are always hard to quantify. Nevertheless, they do exist. For instance, grounding all CF vehicles would

"The best form of welfare for the troops is first-class training."

mean that training would suffer and our operational capability would begin to erode. *Reductio ad absurdum*, the Army

- F.M. Erwin Rommel

would eventually become ineffective due to all the qualified drivers having retired without replacements having been trained. Admittedly, that scenario is extreme, but it does serve to illustrate that well-intentioned ("Let's cut the accident rate") initiatives with seemingly positive results ("Look, Ma, no accidents!") can have deleterious long-term effects.

Fourth - How do we convince the persons at risk that safety measures are in their own best interest? It is, after all, not the safety expert who has the accident. It's axiomatic that the most effective safety programme is one, which actually convinces the target audience that safety precautions are useful, positive and desirable.

It's also important to remember that training is not an end in itself, either. We train, not for the sake of training, but so that we will be capable of accomplishing our mission. The more difficult the mission or task will be, the more realistic the training must be if the trainee is to succeed when putting his lessons into practice. Good training not only imparts abilities; it also gives the soldier confidence in his equipment, in his own skills and in the skills of his mates and leaders. This confidence is the cornerstone of high morale.

We are thus faced with a dilemma - on one hand, we need to conduct effective, realistic training. On the other hand, we cannot let it become *too* realistic - full realism would only be reached if two opposing forces were set on each other with live ammunition. We must, at the end, accept somewhat less than fully realistic training by tempering it with realistic and carefully considered safety regulations.

To this end, an important consideration when discussing safety philosophy is that of 'Acceptable Risk'. This has sometimes been called 'Justifiable' or 'Educated' Risk. For instance, we drive automobiles and live in cities in a country with very cold winters. All of these things have associated risks. People who drive or ride in cars are more likely to die or to be injured than those who walk, all other things being equal. Living in cities exposes us to higher crime rates, increased pollution and so forth. Very cold weather can cause frostbite and hypothermia. We know that these risks exist, yet we choose to accept them. The benefits of living here make these risks acceptable.

How do we distinguish between acceptable and non-acceptable risks? I had occasion to visit a training facility as part of an inspection team some years ago. One stage in the obstacle course consisted of a series of wooden fence posts or telephone poles buried upright in the earth, with the tops about four feet above ground level. The students had to step from one post to the next. That sort of thing was common enough and I suspect that many of us have gone across one of these at some time in our careers. But at this particular base, somebody had strung barbed wire between all the poles - a student falling off would have been very lucky to avoid serious injury, if not death.

That was an unjustifiable risk. There was no requirement for barbed wire - soldiers in basic training have lots of incentive not to fall off obstacles. It was danger with no training value. It achieved nothing and is a classic example of the sort of risk which should not be tolerated.

So what does all this have to do with training and DND's many safety programmes? To start off with, it's very apparent that DND does not hold to the concept of acceptable risk. In our demand for *absolute* safety, we are putting in place safety regulations which are aimed at eliminating the possibility of even the most unlikely accident. We have become mentally geared towards being unable to accept *any* accidents and we seem willing to accept virtually any side effect if we can lower the accident rate by a fraction of a percentage point.

At the risk of some cynicism, our regulations of late seem to have been written by and for lawyers, not trainers or operators. As the natural tendency of any lawyer is to err on the side of caution, the regulations we are bound by are becoming more and more constraining, without any visible concern for the effect on readiness.

It's one thing to take unjustifiable risks or to simply shrug and ignore an accident - "Well, these things happen." It's another to go overboard and insist that any accident automatically indicates a problem with our command and control. The pendulum has indeed swung far over to one side.

We used to talk of two guiding principles which determined our response _ Odds and Risk. In other words, how likely is any given accident to occur and, if it does occur, what is the likely outcome? A hazard with high probability and high damage potential should be given more attention than another hazard with the same probability but a lower damage potential or a third with the same potential for damage but a lower probability.

All this has changed, however. We are now at the point that even the slightest possibility of an accident, even if very unlikely to cause serious injury or damage, results in a raft of prohibitions, limitations and restrictions.

This is having both direct and indirect effects. First, and let there be no doubt, training is being compromised.

Secondly and paradoxically, DND's present fixation on absolute safety is damaging the effectiveness of our safety programmes. If we allow our credibility to be hurt in the eyes of the people at risk, everything we subsequently do or say is tainted in their eyes. When, later, we tell them something really important, they've already turned off.

There's another problem as well and it goes right back to Machiavelli, who said that a wise prince will never give an order which he knows will not be obeyed. By setting standards that the universal opinion at the coal

face feels are unreasonable, we are guaranteeing that efforts will be made to evade them or, at best, pay lip service to them. Laws which are likely to turn otherwise honest persons into lawbreakers are not good laws.

Let me cite a recent example.

It has been decided that HC (hexachloroethane) smoke munitions are not as innocuous as once thought and a number of restrictions have been placed on their use¹.

First, the use of HC smoke near places where visibility is critical (eg. roads and airfields) is prohibited. No problem _ soldiers can understand that and they comply.

Second, the use of HC smoke in places where large concentrations of the smoke can accumulate (inside buildings, etc) is forbidden. That, too, seems not unreasonable and, after sending one or two sceptics to the hospital, HC users have bought into that one, too. (In a perverse fashion, such mishaps may actually have helped the explosives safety programme; in the face of this evidence, previously cynical users are convinced of its credibility.)

Third, everybody has to be briefed as to hazards and the area cleared of unnecessary personnel. Well, OK, this isn't much trouble.

Fourth, everybody in the vicinity must wear a gas mask. Well, that's not much of a burden and has training value to boot. We've managed to sell that to the users. Who wants to get sick if they can prevent it?

Up to this point, we've done a good job. A potential hazard has been addressed with little fuss and the people at risk are cooperating more or less willingly _ it's as close to the ideal as one could wish.

Now let's look at another requirement. "Smoke shall not be directed into FIBUA (Fighting In Built-Up Areas) sites, bunkers or vehicles where dissipation is impeded." At this point, the whole show falls apart. An army training centre must have its students train on and practice FIBUA. This is an essential skill and part of the infantry curriculum. It's more than just theory _ our troops in Bosnia have made good use of it. Perhaps it's simply a question of interpretation, but the people setting the policy are now taking the stand that this particular phrase prohibits the use of HC smoke munitions anywhere near a FIBUA building.

At a stroke, FIBUA training is made less realistic and less challenging. That's the direct effect. Looking at the indirect results, will we pay a human cost sometime down the pike because our troops can't be fully trained in a key aspect of their trade? Maybe, maybe not _ but the trainers are concerned.

From the explosives safety programme point of view, it's even worse - nobody believes in this limitation. You can sell the troops on the requirements for gas masks. You can sell them on minimized exposure.

You can convince them not to use smoke near roads and all the rest, but this particular restriction is perceived as so 'Ivory Tower', so patently unrealistic that they _ seasoned, experienced, intelligent troops _ simply cannot believe it. And that places in jeopardy every other effort we have made and every success we have achieved.

A second example concerns M69 practice grenades. These were purchased as a counterpart to the M67 fragmentation grenade. The only explosive content is in the associated M228 fuze, which contains a primer, a delay assembly and a small amount of black powder for noise. With this exception, the M69 looks like, is used like and functions like the real thing. It's an excellent training aid, ideal for trench clearing or FIBUA training. Thunderflashes, while useful, just don't provide the same training value.

Current policy requires dud M69s to be destroyed in place, using high explosives. As no range control section is going to countenance the use of C4 inside valuable (and expensive) training sites, this effectively bars the use of an essential training aid _ for which there is no effective substitute _ in built-up areas, FIBUA sites and prepared defensive positions.

The rationale for this policy is that there's a possibility of a hung striker in the fuze, which could complete its stroke if disturbed. If that happened, fragments of the fuze could be ejected from bottom of the body or, in extreme cases, the steel body could theoretically split. Well, all of this is true. But look at the odds. A man wearing leather gloves who picks up a dud and keeps the bottom of the grenade aimed away from himself, while not *absolutely* safe, is probably in more danger of getting hit by a car on his way home than he is of being injured by the M69.

Another example involves live-fire training.

One of the hardest things for a soldier to develop is confidence in his team-mates. An essential skill and good tool for this development is trench clearing, where one or more soldiers provides covering fire on a enemy trench while another slithers up close enough to drop a grenade into it. For both elements, the pucker-factor is very high and, without having practised this skill, a soldier in battle can be at a severe disadvantage.

Current interpretations of safety regulations (as practised at the Small Arms Cell in Gagetown) call for all fire to cease when the thrower approaches an angle of 688 mils (19°) from the support group to the trench². In some cases, this might be 20 metres away from the trench. With such a limitation, neither the fire support group nor the thrower are really challenged and neither are having their skills honed to a proper level. Confidence-building is eliminated.

Then there is the requirement for safety staff. Live-fire shoots now require safety staff in huge numbers, up to a 1:1 ratio in some cases³. There is no particular reason to think that safety is greatly enhanced

thereby, but on the other hand, realism and confidence-building are dramatically compromised.

People perform very much as they have been trained. Here is an example with possible implications for us. In the United States, it was at one time common for police officers on the pistol range to dump the empty casings from their revolvers into their off hand and then place them carefully in a tin can for later collection. This is done in the interests of neatness and (here we go again) for safety reasons _ one could easily slip on the brass. A reasonable precaution with inconsequential effects? Perhaps, but it is a matter of record that more than one dead cop was found with a hand full of empty casings, shot while instinctively looking for the tin can after emptying his weapon at a felon. They were betrayed by unrealistic training and paid the price of too much safety.

Have we any hidden traps like this? One might remember the old C1 rifle and the prohibition against *aiming at the enemy* while equipped with a Blank Firing Attachment. One might also cite some unit SOPs which flatly banned firing flares when helicopters were overhead. A good, common-sense policy if it was an exercise and the helicopters were friendly, but what would this ingrained precaution have cost us when it wasn't peacetime and the helicopters were landing enemy troops? Such safety-based training precautions should be clearly labelled *PEACETIME CONSTRAINT ONLY*, but how many are?

Oh yes, the troops will adapt. They'll learn quickly, but what will that lesson cost us, both in lost battles and lost lives?

These are but a few cases. There are many, many others, in all areas of safety. The bottom line is that we are setting safety standards that are far more stringent than those of other armies. In fact, the level of risk the army is willing to accept during training is far less than we contend with every day just by virtue of living in a city, driving a car or living in a cold climate.

The matter is made worse by the fact that present safety regulations are complex, poorly-written and often contradictory. Pose a question to five different people and you're likely to get five different answers. *This is safe?*

Why are we doing this to ourselves? Some of it may be due to well-intentioned people honestly concerned about the potential for an accident. But that's only part of it.

I think the real answer may lie in what a friend recently termed 'a climate of fear'. Personnel at all levels are concerned with the possibility of being used as a scapegoat in the event of an accident. The perception in some quarters, given that many senior officers are suffering from the same pressures, is that the person responsible for making a decision will be left exposed and unsupported. Caution Before All becomes the watchword.

It's very easy, after all, to justify stricter safety rules, particularly when

sitting in an office a thousand miles away from the coal face. To deliberately countenance relaxing safety standards is another thing entirely. It takes conviction, an appreciation of the requirements of the users and a willingness to take risks and accept responsibility in the interest of the betterment of the forces.

There may be a third reason. Many of the safety regulations we now live with are the result of boards of inquiry and other accident investigations. Again, with the 'climate of fear', too many people feel that they will be perceived as somehow remiss or professionally lacking if they do not direct or at least recommend additional safety measures. The fact that the additional measures may not address the cause of the accident is immaterial _ the individual can be seen as having acted.

As an example of this, I investigated an accident years ago. A militia unit had been carrying out anti-ambush training at night. When the convoy was ambushed, one driver forgot to put on his parking brake or take the vehicle out of gear. He simply exited the cab, took up a position behind the vehicle in front of him and proceeded to return fire. The truck slowly eased forward, pinning him against the vehicle in front. Fortunately, he lived. It was clear from the outset that this accident was caused by an excited young man not thinking. But the reviewing authority directed that, to prevent further such incidents, personnel participating in such training would have to have had a certain number of hours engaged in black-out driving. What this had to do with the accident was _ and still is _ unclear, but the perception of action was achieved. I suspect that the reserves in that area are still going through the motions, many years later, to the detriment of other training.

As a corollary to this, there is a tendency to impose more rules rather than enforce the ones already in place. Charging somebody for not having followed existing rules can be seen in some circles as a tacit acknowledgement that the chain of command was not properly supervising the erring individual. Imposing new rules avoids this.

"It's very easy, after all, to justify stricter safety rules, particularly when sitting in an office a thousand miles away from the coal face."

One of the problems with any regulation is that it acquires its own momentum. Even when circumstances change, the rule remains. One could mention a WWII British time-and-motion study on Royal Artillery gun detachments. The investigation noted that, while most of the gunners were dashing back and forth, one member stood rock still a short distance behind the gun. It took quite a while to find a gunner old enough to remember that this was the man told off to hold the horses...

All this does not mean that we should immediately toss out the rulebook and turn people loose with no guidance or accountability. It does not mean that we should accept unjustifiable risks or unnecessary casualties. It does however mean that the CF needs to reassess its entire safety philosophy.

It means that DND needs to accept that you cannot produce soldiers capable of winning battles without taking some risks and that those risks, carefully considered, can sometimes improve training and increase subsequent survivability in an operational theatre.

It means that we need to recognize that a training accident does not automatically mean that the training was badly conceived, badly led or run to standards that were too loose.

It means that we (our political masters, the public, the press and the Legal branch) must accept that the profession of arms cannot be judged by the standards of any other, that it is inherently risky and that people do get hurt in training. We are not (at least we shouldn't be) training for office or garrison duties. We are training for war; to succeed, that sometimes involves taking risks.

It means that we need to get more aggressive in our own defence. We need to openly and publicly state, without equivocation, *"Yes, it's too bad Bloggins got hurt, but this is a dangerous business. If we are not prepared to take this sort of risk, Bloggins and his mates would be at more risk the next time they are in operations."* Inasmuch as our present attitude assumes that injuries automatically indicate negligence on somebody's part, it is not surprising that outsiders take the same approach. I strongly suspect that we would face far less outside criticism if we took a more forceful line.

It means that the staff at all levels must seriously consider the impact on training before imposing additional safety regulations. Ideally, safety regulations should in future be subject to stringent re-examination on a periodic basis with an aim to streamlining, simplifying and killing unjustifiable restrictions.

It means that we should be placing our emphasis on proper application and enforcement of existing regulations rather than on the imposition of new ones.

It means that commanders at all levels should be freer to make command decisions. Safety is certainly a command responsibility, but it is only one of many command responsibilities. If, after careful and educated consideration, a commander considers that taking certain risks will result in much improved training (and hence readiness), then he should be free to carry on. (This should not be viewed as a Get Out of Jail Free card; officers would still be responsible for directing unjustifiable risks.) The staff and the Deputy Judge Advocate are there only to advise; the commander should *command*.

Above all, it means that we must be prepared to defend a commander taking a justifiable risk, even if casualties result.

Too much safety results in substandard training, in turn resulting in less-than-fully-effective troops. Worse, it forces good soldiers into a

position of having to evade regulations to accomplish their mission.

Our safety policies are not, in the long run, doing us, our troops or our nation any favours.



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Endnotes

1.B-GL-304-003/TS-0A1 Training Safety, Chapter 4, Section 3, Art 410
[\[Return\]](#)

2.Telecon Cpts Herold/Johnston 15 April 1998 [\[Return\]](#)

3.B-GL-304-003/TS-0A1 Training Safety, Chapter 11, Section 3, Art 1116, Para 26b [\[Return\]](#)

Did You Know...?		
Operational commanders can depend on the Ammo Section for numerous types of support such as:		
<ul style="list-style-type: none">• coordinating ammunition deliveries to and from the units, including preparing and completing all technical and logistical documentation;• rotating ammunition stocks to and from the forward areas or front lines;• conducting technical and safety briefings for personnel including flight crews and ships'masters;• liaising with domestic and foreign officials on	<p>From:</p> <p><i>Safety Digest - Edition 3 1997</i></p> <p>Courtesy of: Sgt Dan Dupuis</p>	<ul style="list-style-type: none">• assisting in requirements planning, advising on availabilityof stocks and setting up delivery schedules;• implementing new safety procedures;• conducting safety briefings and accident investigations;

<p>transportation and storage matters;</p> <ul style="list-style-type: none"> • arranging for the safe storage of stocks; • providing safety and handling guidelines for domestic and foreign stores; 	<ul style="list-style-type: none"> • providing rear area EOD/IED identification and disposal; • conducting prefire inspections and testing on the firing lines; • maintaining ammunition and explosives in the field; and • augmenting the unit where required.
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The Future Security Environment

Some Recent Trends and Selected Readings

Mr. Shaye K. Friesen

The present strategic environment is very different than the one that moulded Canada's international security policy during the previous decades. Since the end of the Cold War, the world's geopolitical framework has continually undergone dramatic changes. Changing technological imperatives now have the potential to fundamentally transform the very nature of warfare. The world is increasingly becoming interdependent and interconnected across key regions through modern developments in communications, transportation, information technologies and commerce. Broader evidence also suggests that the compression of time and the pace of change are becoming so extreme, that it will make strategy, with its drive to shape the future, one of the most important elements of national security.¹

Admittedly, it is a daunting and formidable task to predict what will happen in the 21st Century with total accuracy. Some analysts maintain that, because of the exceedingly complex, anarchic nature and contradictory parameters of war, the future cannot be predicted with great precision.² That being said, this should still not be a stumbling

"Nothing is certain, except that we face innumerable uncertainties; but simply recognising that fact provides a vital starting point, and is, of course, far better than being blindly unaware of how our world is changing.

-Paul Kennedy

Preparing for the Twenty-first Century

block to at least contemplating the future. There is a great deal of utility in the examination of recent trends and plausible scenarios of the future that look beyond the present state of affairs. Changes in the international landscape clearly have an impact on Canadian defence planning and the formulation of policy. Indeed, if the historical record is to serve any sort of example, then precedent dictates that the land component will be an essential element for dealing with international crises and shaping the future international security system. Since Canada will be called upon to provide security, the configuration and force structure of the Land Forces are therefore contingent upon exploring what will happen in the future. Although the exact nature of the future security environment is unclear, it is nevertheless critical to examine different interpretations and key trends of the global environment, and to sketch an array of security trends, which will eventually pave the way for future structural adaptation. This analysis is not intended to comprehensively depict the future or try to predict how the world will change. Instead, it gives a brief projection of the kind of security environment we face, and suggests what those possible changes might be.

Defence planning has changed greatly with the end of the Cold War. To a considerable extent, it has become more uncertain and complex than before. The nature and sources of conflict have become more diverse and less predictable. As more and more threats have emerged, the spectrum of conflict has become broader. The range of missions and types of operations have increasingly been geared towards low-intensity conflict scenarios (or "military operations other than war") and non-conflict scenarios, which were previously considered marginal. The notion of national security is continually changing to meet the evolving global security environment. Earlier threats on the periphery such as economic competition, regional rivalries and mass migration have been pushed into the foreground, competing with conventional military rivals as factors that influence the decision to use force. Many of the traditional distinctions that characterized the international system are eroding as a result of new challenges.³

A number of emerging trends are likely to shape the structural dynamics of the future global environment and dominate the principles of national security. The bipolarity of the Cold War international system, based on ideological suspicion and military-political tension, has given way to multipolarity. This has left dangers undiminished, promoted new and potentially destabilizing trends, and has increased the likelihood of potential opportunities for conflict. The post-Cold War geopolitical environment has also been accompanied by shifts in the world's distribution of power, rivalries between nation-states, and unstable and implosive regional powers. Places like Asia are growing in salience, economically and militarily, while other traditionally strong countries are in a phase of relative decline. Some would even argue that China appears to be on a collision course with the West.⁴

Violent conflict still continues unabated at alarmingly high levels, ranging from internal unrest within state borders to open interstate conflict between nation-states. A great majority of armed conflicts will take place within and between states in areas of the developing world. Recent conflicts have also been fuelled by increases in ethnic polarization, religious hostility, nationalistic pressures and local wars involving disputes over national sovereignty, territorial independence and state collapse. According to Samuel Huntington, the future of world politics is entering a new phase, in which the great divisions among humankind and the dominating source of conflict will be between cultural civilizations.⁵

In addition, acute national security concerns emanate from non-state actors such as terrorist organizations, international crime syndicates, and drug cartels, who possess advanced technologies and weapons of mass destruction. The proliferation of weapons of mass destruction will be an intractable problem. These "low end" threats will have "high end" effects.⁶ An immediate consequence is that Canada would become increasingly vulnerable to terrorist attacks. In spite of strong mass media

and public pressure to intervene, opponents are increasingly finding ways of denying access to areas of contention. As Martin Creveld has pointed out, the changing nature of the security threats has led to the devolution of the power and ability of the sovereign nation-state to meet the new challenges.⁷ Nonetheless, while the state is still going to be an important player in the future world, it will no doubt face a variety of different threats, which will seek to resolve disagreements by force.

Other factors, such as current social and demographic trends, will have a profound impact on the changing future security environment. On one hand, the world's burgeoning population growth will bring prosperity to the West. On the other hand, it will trigger humanitarian crises and intermediate social effects, such as increased urbanization, accelerated poverty, disease and famine, waves of mass refugees and migrations, and pervasive unemployment, which will become immediate causes of conflict. Under certain circumstances, this can increase financial and political demands on the state, aggravate competition and produce civil violence and instability. Conflicts between communal groups and states have been recognized as the major challenges to domestic and international security in most parts of the world.⁸ Furthermore, scarcities of renewable resources - including cropland, forests, fresh water and fish - are already contributing to conflicts in many parts of the developing world, which foreshadow a surge of similar violence in coming decades as environmental scarcities worsen in many developing countries.⁹

As the dual demographic trends of rapid population growth and urbanization continue to change the face of the developing world, the likelihood of urban insurgency is also increasing. Ralph Peters maintains that the "future of warfare lies in the streets, sewers, high-rise buildings, industrial parks, and the sprawl of houses, shacks, and shelters that form the broken cities of our world."¹⁰ In the next century, which will be an uncontrollably urbanizing world, the army will be unable to avoid urban deployments short of war and possibly even full-scale city combat.

Coupled with demographic trends, are the notable effects of the expanding worldwide economy. The economic and political influence of multinational global corporations and commercial companies is growing. In the near future, this may even lead to a re-emergence of the struggle for power between states and commercial organizations, making it harder to implement and enforce coercive measures and economic embargoes given the transnational character of international business. New economic interests will also inevitably bring about a struggle for resources and a place in the global marketshare, while international development could unexpectedly turn out to be an empty gesture. Future economic changes could lead to an uneven distribution of power and create a stratification of wealth between societies, whereby some countries could control a greater share of the world's economic capital, and other nations would be unable to adapt to change and may risk falling behind. This could create tension, lead to a rejection of Western culture and values and create a whole new set of political and ethical challenges for the government.¹¹

Equally important, new advances in technology will also play an ever-increasing role in the future security environment. Few can deny that important civilian technologies are finding their way into the mainstream of the army. Several lines of emerging and integrative technologies are driving the development and acceptance of the digitization of the battlefield. Other technological developments, including digitized communications, artificial intelligence and robotics, servo-mechanisms and biological engineering, micro-miniaturization and micromachines, nanotechnology, remote sensing, and virtual reality/telerobotics, lasers, high powered microwaves and directed energy weapons, air-fuel explosives and cluster bombs will be carried on manned aircraft or unmanned vehicles (UAVs), will connect the future battlefield through networking platforms. Satellites will be used for communications on the battlefield and for targeting land and sea based missiles and aircraft. Some lasers and directed energy weapons will be space-based for defence against theatre ballistic missiles. Nations will have developed methods of protecting their own information systems from attacks by foreign intelligence services. Some robotic and weapons systems are in the field now and have seen combat, but many more developments in the technology of warfare, some not yet discovered, are in the research and development pipeline and will become common in the decades of the 21st Century. The future of land warfare will be shaped by the rapidly expanding information technologies, fast-growing communications and computational capabilities, and the employment of substantial space assets.^{[12](#)}

Just maintaining superiority and staying ahead of the emerging technology and potential adversaries will be a significant challenge to national security of the next half-century. Indeed, while technology can both augment political stability and limit collateral damage to the enemy, it can expose a vulnerable nation to attack and exacerbate the difference between "haves" and "have-nots." Potential adversaries could turn to asymmetrical response scenarios. Because the commercial market is driving change, technological diffusion means that future enemies can also field advanced and high-quality weaponry, and have equal access to high-grade information. While the overarching Soviet threat has receded for the time being, potential problems such as the employment of weapons of mass destruction (biological, chemical and nuclear) have risen as a result of the rapid spread of technology on the open market. As the arming of the Third World continues unchecked in the face of counter-proliferation initiatives, terrorists, rogue states and international crime syndicates now have access to sophisticated technologies and weapons of mass destruction.^{[13](#)}

The consequence of this means that a so-called "revolution in military affairs" (RMA) is underway. The RMA is marked by a discontinuous increase in potential military effectiveness and capability that fundamentally alters the nature of the battlefield. Though some have debated whether or not an RMA is actually underway, there can be no question that it provides a conceptual framework for future

force-structure development, defence planning and the exploitation of technology. Equally important, what is revolutionary is not the speed with which the entire shifts occur, "but rather the recognition, over some relatively brief period, that the character of conflict has changed dramatically, requiring equally dramatic—if not radical—changes in military doctrine and organizations."¹⁴ The current RMA will involve the emergence of many different new warfare dimensions, such as long-range precision strike, information warfare, dominating manoeuvre and space warfare. At some point, technological innovation could very well invalidate former conceptual frameworks, demanding a change in the accustomed size, definitions, organization and measurement of military effectiveness.

Broadly speaking, the post-Cold War environment has been an exercise in the future security environment. It has been characterized by geopolitical uncertainties arising from a diffusion of centres of power, collapsing authority in failed states, dysfunctional economies, transnational dangers, rampant ethnic and religious problems within and between various countries, and technology-driven change. These recent dimensions of the future environment are not based on a radical departure from the past, but on logical extensions of observable trends already taking place. There can be little doubt that all of these conditions will pose serious risks to stability.

This is not to suggest that Canada should reconfigure its national security apparatus. Rather, it highlights the importance of the security environment as we plan for future force structures, and draws attention to possible changes in how we prepare the core competencies of the army to meet this environment. Though these problems do not generally affect Canada's vital national security interests directly at the present, they concern Canadian interests in global stability and may be of future strategic importance. The information age presents us with both challenges and opportunities. Providing security against potential adversaries will be a significant challenge in the new millennium. Despite the realm of uncertainty, the army should strive to think imaginatively about the unexpected by anticipating the future and exploiting opportunity. The alternative, of course, is to live in the past and resist change, needlessly squander resources in the process, and miss out on key emerging technologies. Just as the failure to understand our past military heritage condemns us to repeat our mistakes often with great cost, the failure to look into the future could have drastic repercussions in both the civilian and military theatres.



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1 Steven Metz, *Strategic Horizons: The Military Implications of Alternative Futures* (Carlisle: U.S. Army War College, Strategic Studies Institute, 1997), p. 1. [\[Return\]](#)

2 See John A. English, *Marching Through Chaos: The Descent of Armies in Theory and Practice* (Westport: Praeger, 1996). [\[Return\]](#)

3 RAND Corporation, *Sources of Conflict in the 21st Century: Regional Futures and U.S. Strategy*. by Zalmay Khalilzad and Ian O. Lesser (editors). Santa Monica: 1998, p. 1. [\[Return\]](#)

4 See the interesting analysis made by Richard Bernstein and Ross Munro, *The Coming Conflict with China* (New York: Alfred A. Knopf, 1997). Other interesting works are from J. Mohan Malik, "The Sources and Nature of Future Conflicts in the Asia-Pacific Region," *Comparative Strategy* 16, 1 (1997). [\[Return\]](#)

5 Samuel P. Huntington, *Clash of Civilizations and the Remaking of World Order* (New York: Simon and Schuster, 1996). [\[Return\]](#)

6 *Preparing Now: Alternative Paths to Military Capabilities for an Uncertain Future*, A Summary Report of a Conference Organized by the Institute for Foreign Policy Analysis, February, 1998, p. 4. [\[Return\]](#)

7 In the words of Van Creveld, "The state, which since the Treaty of Westphalia has been the most important and most characteristic of all modern institutions, is dying." Martin van Creveld, "The Fate of the State," *Parameters* (Spring 1996), pp. 4-18. [\[Return\]](#)

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